

# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

## ANALYTICAL REPORT

TestAmerica Laboratories, Inc.  
TestAmerica St. Louis  
13715 Rider Trail North  
Earth City, MO 63045  
Tel: (314)298-8566

TestAmerica Job ID: 160-19454-1  
TestAmerica Sample Delivery Group: SL2331  
Client Project/Site: F16-020

For:  
CH2M Hill Plateau Remediation Company  
PO BOX 1600, MS H8-41  
Richland, Washington 99352

Attn: Mr. Scot Fitzgerald



Authorized for release by:  
11/11/2016 3:41:05 PM

Jayna Awalt, Project Manager II  
(314)298-8566  
[jayna.awalt@testamericainc.com](mailto:jayna.awalt@testamericainc.com)



### LINKS

Review your project results through  
**TotalAccess**

Have a Question?



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[www.testamericainc.com](http://www.testamericainc.com)

*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

*Results relate only to the items tested and the sample(s) as received by the laboratory.*

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**SAMPLE ISSUE RESOLUTION**

<b>SIR NUM</b>	SIR17-340
<b>REV NUM</b>	0
<b>DATE INITIATED</b>	1/10/2017

**SAMPLE EVENT INFORMATION**

**SAF NUM(S)** F16-020  
**OPERABLE UNIT(S)** 200-DV-1  
**PROJECT(S)** 200-DV-1  
**SAMPLE EVENT TITLE(S)** 200-DV-1 OU Waste Sites  
**LABORATORY** TestAmerica St. Louis

**SAMPLING INFORMATION**

**NUMBER OF SAMPLES** 4  
**SAMPLE NUMBERS** B37FH6, B37FH8, B37FJ0, B37FJ2  
**SAMPLE MATRIX** SOIL  
**COLLECTION DATE** 10/11/2016 - 10/12/2016  
**SDG NUM** SL2331

**ISSUE BACKGROUND**

**CLASS** Laboratory Issue  
**TYPE** Chain of Custody Issue  
**DESCRIPTION** COC F16-020-1414, SAMPLE B37FJ2  
COC F16-020-1408, SAMPLE B37FH6  
COC F16-020-1410, SAMPLE B37FH8  
COC F16-020-1412, SAMPLE B37FJ0  
Broken chain of custody, missing FEDEX stamp from TARL to TASL.

**DISPOSITION**

**DESCRIPTION** DOCUMENT AND CLOSE

**JUSTIFICATION** DOCUMENT AND CLOSE

SUBMITTED BY: Sarah Nagel DATE: 01/05/2017  
ACCEPTED BY: Kirsten Killand DATE: 01/10/2017



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## Case Narrative

Client: CH2M Hill Plateau Remediation Company  
Project/Site: F16-020

TestAmerica Job ID: 160-19454-1  
SDG: SL2331

**Job ID: 160-19454-1**

**Laboratory: TestAmerica St. Louis**

**Narrative**

**CASE NARRATIVE**

CH2MHill Plateau Remediation Company  
P.O. Box 1600  
Richland, Washington 99352  
November 11, 2016  
Attention: Scot Fitzgerald

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SDG : SL2331  
Number of Samples : 4 samples  
Sample Matrix : Soil / Water Extractions  
Data Deliverable : Summary  
Date SDG Closed : October 14, 2016

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II. Introduction

On October 14, 4 samples were received by TestAmerica - St. Louis for chemical analysis. The samples were received within temperature criteria. See the COC and receipt checklists for documentation of any variations on receipt conditions and temperature. Upon receipt, samples were given laboratory Ids to correspond with specific client Ids. Please refer to the Sample Summary sheets attached to this case narrative. This report is incomplete without the narrative.

The following SAFs are associated with this SDG: F16-020

III. Analytical Results/ Methodology

The analytical results for this report are presented by analytical test. Each set of data includes sample identification information, analytical results and the appropriate detection limits. All results are based upon samples as they were received, i.e. wet weight, unless otherwise noted on the data sheets. See the attached Methods Summary Form for the methods used in this SDG.

MS/MSD/Dup analysis was done per the client requirements. Analytical batches that did not contain matrix QC were analyzed with an LCS/LCS duplicate.

Note: For Metals analyses, per standard practice, all 6020 water and soil samples are initially prepared at 2x dilution. This standard dilution does not affect reporting limits as MDL studies are also prepared in the same manner. These dilutions do not necessitate flagging unless otherwise noted in the case narrative.

For solid matrices, all Metals analyses (including Hg) use a Standard Reference Material for the Laboratory Control Sample (LCS). Certificate for this source material may be obtained from TASL.

For Anion analysis, samples have been started at a 2x dilution per CHPRC direction. The samples are flagged accordingly with a "D" flag if sample concentration is above the MDL/RL. Non-conformance will be included in the below section only if dilution is greater than 2x.

For WTPH methods, the lab utilizes method 8015B. Per CHPRC direction, the method name in the electronic data has been modified to read WTPH in the place of 8015B.

Per CHPRC direction (June 2014), Boron will be reported for Metals using method 6010. Boron will no longer be reported by method 6020.

Per CHPRC direction, due to the short hold times for Nitrate, Nitrite and Phosphate by IC (48 hours) as well as pH analysis (24 hours), a SIR request is not needed when samples are run outside 1x hold but within 2x hold. A narrative comment will be included below if a sample is run outside the lab-specified hold time for waters.

## Case Narrative

Client: CH2M Hill Plateau Remediation Company  
Project/Site: F16-020

TestAmerica Job ID: 160-19454-1  
SDG: SL2331

### Job ID: 160-19454-1 (Continued)

#### Laboratory: TestAmerica St. Louis (Continued)

For extractable and volatile organic analyses, several analytes are considered poor performers and will not meet CHPRC QC limits. Per CHPRC direction, the lab's statistical limits have been reported. Excursions outside these statistical limits will include a non-conformance in the sections below.

#### IV. Definitions

QCBLK-	Quality Control Blank, Method Blank
QCLCS-	Quality Control Laboratory Control Sample, Blank Spike
DUP-	Laboratory Duplicate
MS-	Matrix Spike
MSD-	Matrix Spike Duplicate

The term "Detection Limit" used in the analytical data report refers to either the lab's standard reporting limits or contractually required reporting limits, whichever is applicable.

The following data qualifiers may be applicable to the results in this report, as appropriate.

- **B** - For inorganic analyses, the sample result is greater than the MDL but less than the RL.
- **B** - For organic analyses, Method Blank contamination. The Method Blank contains the target analyte at a concentration above the MDL.
- **J** - For organic analyses, the sample is estimated and less than the RL.
- **C** - For inorganic analyses, Method Blank contamination. The Method Blank contains the target analyte at a concentration above the MDL/RL but not greater than 5% the MB.
- **D** - For all analyses, the sample result was obtained from the analysis of a dilution. For Metals analyses, per standard practice, all samples are initially prepared at a 2x dilution. This standard dilution does not affect reporting limits as MDL studies are also prepared in the same manner and will not be narrated below. Only dilutions above 2x will be narrated and considered a true dilution for these solid samples.
- **N** - For inorganics and GC analyses, the spike/spike duplicate recoveries are outside QC limits.
- **T** - For GCMS analyses, the spike/spike duplicate recoveries are outside QC limits.
- **o** - For all analyses, the LCS (LCSD) recoveries are outside QC limits.
- **P** - For organic analyses (PCB/Pests only), the aroclor target analyte has greater than 25% difference for detected concentrations between the two GC columns.
- **X**- Organics and Anions IC - Sample concentration over calibration and/or surrogate recovery outside QC limits.
- **X**- Inorganics - MS/MSD; the analyte present in the original sample is > 4x the matrix spike concentration and/or sample concentration is greater than the linear range.
- **Z**- Sample was prepped or analyzed beyond the specified sample holding time.
- **y** - RPD is outside established limits.

#### DRO

#### Batch: 276892

The continuing calibration verification (CCV) associated with batch 160-276892 recovered above the upper control limit for Diesel. Samples were requesting Kerosene only; therefore, the data have been reported. The following samples are impacted: B37FJ2 (160-19454-1), B37FH6 (160-19454-3), B37FH8 (160-19454-5), B37FJ0 (160-19454-7), (CCV 160-276892/16), (LCS 160-275387/2-A), (MB 160-275387/1-A), (160-19454-B-1-C MS) and (160-19454-B-1-D MSD).

#### Water Extraction

As per client request, the following soil samples are to be run as water extractions necessitating a di-prep to be performed. Samples were prepped at 1:1 ratio in a 1L poly container. Amount of sample and Di water used listed in attached di-prep document. Samples were then shaken by hand to break up any large soil clumps before placing on a shaker table for 15 minutes. After prep, samples were made available to the lab for analysis. B37FJ2 (160-19454-2), B37FH6 (160-19454-4), B37FH8 (160-19454-6), (160-19454-A-6 MS) and (160-19454-A-6 MSD)

#### ICP Metals

**Case Narrative**

Client: CH2M Hill Plateau Remediation Company  
Project/Site: F16-020

TestAmerica Job ID: 160-19454-1  
SDG: SL2331

**Job ID: 160-19454-1 (Continued)****Laboratory: TestAmerica St. Louis (Continued)****Batch: 276916**

The following samples were diluted to bring the concentration of target analytes within the calibration range: B37FJ2 (160-19454-1), B37FH6 (160-19454-3), B37FH8 (160-19454-5), B37FJ0 (160-19454-7), (160-19454-A-1-H MS ^), (160-19454-A-1-I MSD) and (160-19454-A-1-G SD ^). Elevated reporting limits (RLs) are provided. These analytes have been qualified accordingly with a "D" flag in the associated samples.

The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 160-275001 and analytical batch 160-276916 were outside control limits for Calcium, Iron, Potassium, and Magnesium. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits. Samples were also run twice with similar MS/MSD results. (160-19454-A-1-H MS ^) and (160-19454-A-1-I MSD) These analytes have been qualified accordingly with an "N" flag in the associated samples.

The serial dilution performed for the following samples was outside control limits for calcium and magnesium indicating the presence of matrix interference: (160-19454-A-1-G SD ^)

**Batch: 276018**

Due to limited sample volume a reduced aliquot was used. Reporting limits have been adjusted accordingly: B37FJ2 (160-19454-2), B37FH6 (160-19454-4), B37FH8 (160-19454-6), (160-19454-A-6 MS) and (160-19454-A-6 MSD).

Due to the high concentration of Sodium, the matrix spike / matrix spike duplicate (MS/MSD) for preparation batch 160-275761 and analytical batch 160-276018 could not be evaluated for accuracy and precision. The associated laboratory control sample (LCS) met acceptance criteria. (160-19454-A-6-B MS) and (160-19454-A-6-C MSD) This analyte has been flagged "X" in the MS/MSD.

**ICPMS Metals****Batch: 278731**

The following samples were diluted to bring the concentration of target analytes within the calibration range: B37FJ2 (160-19454-1), B37FH6 (160-19454-3), B37FH8 (160-19454-5), B37FJ0 (160-19454-7), (160-19454-A-1-B MS), (160-19454-A-1-C MSD) and (160-19454-A-1-A SD). Elevated reporting limits (RLs) are provided. These analytes have been qualified accordingly with a "D" flag in the associated samples.

Due to the high concentration of aluminum, the matrix spike / matrix spike duplicate (MS/MSD) for preparation batch 160-274993 and analytical batch 160-278731 could not be evaluated for accuracy and precision. The associated laboratory control sample (LCS) met acceptance criteria. (160-19454-A-1-B MS) and (160-19454-A-1-C MSD) This analyte has been flagged "X" in the MS/MSD.

The matrix spike (MS) recovery for preparation batch 160-274993 and analytical batch 160-278731 was outside control limits for manganese. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits. (160-19454-A-1-B MS) This analyte has been qualified accordingly with an "N" flag in the associated samples.

**Batch: 278730**

The following samples were diluted due to the nature of the sample matrix. The samples were high in salts, which cause internal standard and QC failures when the samples are run at a lesser dilution: B37FJ2 (160-19454-1), B37FH6 (160-19454-3), B37FH8 (160-19454-5), B37FJ0 (160-19454-7), (160-19454-A-1-E MS), (160-19454-A-1-F MSD) and (160-19454-A-1-D SD). Elevated reporting limits (RLs) are provided. This analyte has been qualified accordingly with a "D" flag in the associated samples.

**Ammonia as N****Batch: 277516**

Ammonia (as N) was detected in method blank MB 160-277286/1-A at a level that was above the method detection limit but below the

**Case Narrative**

Client: CH2M Hill Plateau Remediation Company  
Project/Site: F16-020

TestAmerica Job ID: 160-19454-1  
SDG: SL2331

**Job ID: 160-19454-1 (Continued)****Laboratory: TestAmerica St. Louis (Continued)**

reporting limit. The value should be considered an estimate, and has been flagged "B". If the associated sample reported a result above the MDL and/or RL and is not greater than 5% the method blank, the result has been flagged "C".

The following matrix spike (MS) recovery for NH3 preparation batch 160-277286 and analytical batch 160-277516 was outside control limits: (160-19454-B-7-D MS) Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits. This analyte has been qualified accordingly with an "N" flag in the associated samples.

**Conductivity****Batch: 276644**

Specific Conductance was detected in method blank MB 160-276644/2 at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged "B". If the associated sample reported a result above the MDL and/or RL and is not greater than 5% the method blank, the result has been flagged "C".

**TOC****Batch: 275913**

The following samples in TOC batch 160-275913 were analyzed at dilution to start, based on expected high concentrations of the target analyte and to reduce possible matrix interference: B37FH6 (160-19454-4). Elevated reporting limits (RLs) are provided. This analyte has been qualified accordingly with a "D" flag in the associated samples.

**Batch: 275968**

The following sample in TOC batch 160-275968 was diluted to bring the concentration of the target analyte within the calibration range: B37FJ2 (160-19454-2). Elevated reporting limits (RLs) are provided. This analyte has been qualified accordingly with a "D" flag in the associated samples.

**Batch: 276002**

The following samples in TOC preparation batch 160-275969 and analytical batch 160-276002 were diluted to bring the concentration of the target analyte within the calibration range: B37FJ2 (160-19454-1). Elevated reporting limits (RLs) are provided. This analyte has been qualified accordingly with a "D" flag in the associated samples.

The following samples in TOC preparation batch 160-275969 and analytical batch 160-276002 have no associated Laboratory Control Sample (LCS): B37FJ2 (160-19454-1), B37FH6 (160-19454-3) and B37FH8 (160-19454-5). This is due to the fact that there is no certified reference material for total carbon. The associated method blank (MB) and matrix spike (MS) were within acceptance criteria.

**TIC****Batch: 276587**

The following samples in TIC analytical batch 160-276587 were diluted to bring the concentration of the target analyte within the calibration range: B37FJ2 (160-19454-2), B37FH6 (160-19454-4) and B37FH8 (160-19454-6). Elevated reporting limits (RLs) are provided. This analyte has been qualified accordingly with a "D" flag in the associated samples.

Insufficient sample volume was available to perform a matrix spike/sample duplicate (MS/DUP) associated with the following samples in TIC analytical batch 160-276587: B37FJ2 (160-19454-2), B37FH6 (160-19454-4) and B37FH8 (160-19454-6). An LCS/LCSD was performed instead, to demonstrate precision.

There were no observations or non-conformances associated with the following methods:

**Semivolatiles**

### Case Narrative

Client: CH2M Hill Plateau Remediation Company  
Project/Site: F16-020

TestAmerica Job ID: 160-19454-1  
SDG: SL2331

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#### Job ID: 160-19454-1 (Continued)

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#### Laboratory: TestAmerica St. Louis (Continued)

**Mercury**  
**Cyanide**  
**pH**

We certify that this data package is in compliance with the SOW, both technically and for completeness, including a full description of, explanation of, and corrective actions for, any and all deviations, from either the analyses requested or the case narrative requested. Release of the data contained in this hard copy data package has been authorized by the Laboratory Analytical Manager or designee and the laboratory's client services representative as verified by their signature on this report.

Reviewed and approved:

Jayna Awalt  
St. Louis Project Manager

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## Login Sample Receipt Checklist

Client: CH2M Hill Plateau Remediation Company

Job Number: 160-19454-1

SDG Number: SL2331

**Login Number: 19454****List Number: 1****Creator: Clarke, Jill C****List Source: TestAmerica St. Louis**

Question	Answer	Comment
Radioactivity wasn't checked or is $\neq$ background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	1.5°
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**

CH2M Hill Plateau Remediation Company  
 COLLECTOR: **SL2331**  
 Antonio James  
 SAMPLING LOCATION: C9512, Core 23, B36.H3  
 ICE CHEST NO.: N/A  
 SHIPPED TO: TestAmerica St. Louis

COMPANY CONTACT: TODAY, D  
 TELEPHONE NO.: 376-6427  
 PROJECT COORDINATOR: TODAY, D  
 SAF NO.: F16-020  
 COA: 302532

PROJECT DESIGNATION: 200-DV-1 Operable Unit Characterization of Waste Sites Phase 3 Sampling  
 FIELD LOGBOOK NO.: N/A  
 ACTUAL SAMPLE DEPTH: 139.0 - 140.5 ft  
 OFFSITE PROPERTY NO.: N/A

F16-020-1414  
 PRICE CODE: 8H  
 AIR QUALITY:   
 METHOD OF SHIPMENT: FEDERAL EXPRESS  
 DATA TURNAROUND: 30 Days / 30 Days  
 ORIGINAL

MATRIX*	PRESERVATION	HOLDING TIME	TYPE OF CONTAINER	NO. OF CONTAINER(S)	VOLUME	SAMPLE ANALYSIS	SAMPLE DATE	SAMPLE TIME	MATRIX*
A=Air DL=Drum Liquids DS=Drum Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other	14/40 Days ag 1	14/40 Days ag 1	ag 1	1	120mL	SEE ITEM (1) IN SPECIAL INSTRUCTIONS W/PHL KEROSENE NE: COMMON;	10/12/16	0900	SOIL
POSSIBLE SAMPLE HAZARDS/REMARKS *Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR/JATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1.	28 Days G/P	28 Days G/P	G/P	1	60mL	350.1 AMMONIUM A: COMMON; 9012 CYANIDE: COMMON;			
SPECIAL HANDLING AND/OR STORAGE NA	28 Days ASAP	28 Days ASAP	G/P	1	120mL	SEE ITEM (2) IN SPECIAL INSTRUCTIONS COMMON;			
	None	None	None	1	120mL	SEE ITEM (3) IN SPECIAL INSTRUCTIONS			
	6 Months	6 Months	P	1	120mL	SEE ITEM (4) IN SPECIAL INSTRUCTIONS			
	Cool <=6C	Cool <=6C	ag	1	120mL	SEE ITEM (5) IN SPECIAL INSTRUCTIONS			
	Cool <=6C	Cool <=6C	G/P	1	120mL	SEE ITEM (6) IN SPECIAL INSTRUCTIONS			
	Cool <=6C	Cool <=6C	ag	1	120mL	SEE ITEM (7) IN SPECIAL INSTRUCTIONS			

**CHAIN OF POSSESSION**

SIGN/PRINT NAMES: J. Bock, TARL  
 DATE/TIME: 10-12-16 11540  
 RECEIVED BY/STORED IN: J. Bock, TARL  
 DATE/TIME: 10-12-16 11540

RELINQUISHED BY/REMOVED FROM: Antonio James  
 DATE/TIME: 10-13-16 1355  
 RECEIVED BY/STORED IN: J. Clark  
 DATE/TIME: 10-14-16 0905

RELINQUISHED BY/REMOVED FROM: J. Clark  
 DATE/TIME: 10-14-16 0905  
 RECEIVED BY/STORED IN: J. Clark  
 DATE/TIME: 10-14-16 0905

RELINQUISHED BY/REMOVED FROM: J. Clark  
 DATE/TIME: 10-14-16 0905  
 RECEIVED BY/STORED IN: J. Clark  
 DATE/TIME: 10-14-16 0905

RELINQUISHED BY/REMOVED FROM: J. Clark  
 DATE/TIME: 10-14-16 0905  
 RECEIVED BY/STORED IN: J. Clark  
 DATE/TIME: 10-14-16 0905

RELINQUISHED BY/REMOVED FROM: J. Clark  
 DATE/TIME: 10-14-16 0905  
 RECEIVED BY/STORED IN: J. Clark  
 DATE/TIME: 10-14-16 0905

LABORATORY SECTION: RECEIVED BY  
 FINAL SAMPLE DISPOSITION: DISPOSAL METHOD

TITLE: TRVL-16-227  
 DISPOSED BY: J. Clark  
 DATE/TIME: 10-14-16 0905

PRINTED ON: 9/29/2016  
 FSR ID = FSR37598  
 TRVL NUM = TRVL-16-227  
 A-6003-618 (REV 2)



CH2MHill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		F16-020-1414	PAGE 2 OF 2
COLLECTOR	ANTONIO JAIMES	COMPANY CONTACT	TODAK, D	TELEPHONE NO.	376-6427
SAMPLING LOCATION	C9512, Core 23, B361H3	PROJECT DESIGNATION	200-DV-1 Operable Unit Characterization of Waste Sites Phase 3 Sampling		
ICE CHEST NO.	N/A	FIELD LOGBOOK NO.	N/A	ACTUAL SAMPLE DEPTH	139 0-140.5 ft
SHIPPED TO	TestAmerica St. Louis	OFFSITE PROPERTY NO.	N/A	COA	302632
SPECIAL INSTRUCTIONS		PROJECT COORDINATOR		PRICE CODE	8H
TRVL-16-227		TODAK, D		AIR QUALITY	<input type="checkbox"/>
(1) 8270_SVOA_GCMS: COMMON {Phenol}; 8270_SVOA_GCMS: COMMON (Add-on) {Tributyl phosphate};		SAF NO.		METHOD OF SHIPMENT	
(2) 7471_MERCURY_CV: COMMON (SOLIDS); 6020_METALS_ICPMS: COMMON {Aluminum, Antimony, Barium, Cadmium, Chromium, Copper, Lead, Selenium, Silver};		F16-020		FEDERAL EXPRESS	
6020_METALS_ICPMS: COMMON (Add-on) {Arsenic, Manganese, Nickel, Uranium}; 6010_METALS_ICP: COMMON {Calcium, Iron, Magnesium, Potassium, Sodium};		BILL OF LADING/AIR BILL NO.		ORIGINAL	
(3) 9060_TIC: COMMON {Total Inorganic Carbon}; 9060_TOC: COMMON {Total organic carbon};		N/A			
(4) 6010_METALS_ICP_WE: COMMON {Aluminum, Barium, Calcium, Iron, Magnesium, Manganese, Potassium, Sodium};					
(5) 9050_CONDUCTIVITY_WE: COMMON {Specific Conductance};					
(6) 9045_pH (Non-Aqueous)_WE: COMMON {pH Measurement};					
(7) 9060_TOC_WE: COMMON {Total Inorganic Carbon, Total organic carbon};					

TRVL-16-227

(1) 8270\_SVOA\_GCMS: COMMON {Phenol}; 8270\_SVOA\_GCMS: COMMON (Add-on) {Tributyl phosphate};

(2) 7471\_MERCURY\_CV: COMMON (SOLIDS); 6020\_METALS\_ICPMS: COMMON {Aluminum, Antimony, Barium, Cadmium, Chromium, Copper, Lead, Selenium, Silver};

6020\_METALS\_ICPMS: COMMON (Add-on) {Arsenic, Manganese, Nickel, Uranium}; 6010\_METALS\_ICP: COMMON {Calcium, Iron, Magnesium, Potassium, Sodium};

(3) 9060\_TIC: COMMON {Total Inorganic Carbon}; 9060\_TOC: COMMON {Total organic carbon};

(4) 6010\_METALS\_ICP\_WE: COMMON {Aluminum, Barium, Calcium, Iron, Magnesium, Manganese, Potassium, Sodium};

(5) 9050\_CONDUCTIVITY\_WE: COMMON {Specific Conductance};

(6) 9045\_pH (Non-Aqueous)\_WE: COMMON {pH Measurement};

(7) 9060\_TOC\_WE: COMMON {Total Inorganic Carbon, Total organic carbon};





CH2M Hill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		F16-020-1408	PAGE 2 OF 2
COLLECTOR	Antonio Jaime	COMPANY CONTACT	TODAK, D	TELEPHONE NO.	376-6427
SAMPLING LOCATION	C9512, Core 11, B361B3	PROJECT DESIGNATION	200-DV-1 Operable Unit Characterization of Waste Sites Phase 3 Sampling		
ICE CHEST NO.	N/A	FIELD LOGBOOK NO.	N/A	ACTUAL SAMPLE DEPTH	70.5 - 71.8 ft
SHIPPED TO	TestAmerica St. Louis	OFFSITE PROPERTY NO.	N/A	COA	302632
SPECIAL INSTRUCTIONS		BILL OF LADING/AIR BILL NO.			

TRVL-16-227

(1) 8270\_SVOA\_GCMS: COMMON {Phenol}; 8270\_SVOA\_GCMS: COMMON (Add-on) {Tributyl phosphate};  
 (2) 7471\_MERCURY\_CV: COMMON (SOLIDS); 6020\_METALS\_ICPMS: COMMON {Aluminum, Antimony, Barium, Cadmium, Chromium, Copper, Lead, Selenium, Silver};  
 6020\_METALS\_ICPMS: COMMON (Add-on) {Arsenic, Manganese, Nickel, Uranium}; 6010\_METALS\_ICP: COMMON {Calcium, Iron, Magnesium, Potassium, Sodium};  
 (3) 9060\_TIC: COMMON {Total Inorganic Carbon}; 9060\_TOC: COMMON {Total organic carbon};  
 (4) 6010\_METALS\_ICP\_WE: COMMON {Aluminum, Barium, Calcium, Iron, Magnesium, Manganese, Potassium, Sodium};  
 (5) 9050\_CONDUCTIVITY\_WE: COMMON {Specific Conductance};  
 (6) 9045\_pH (Non-Aqueous)\_WE: COMMON {pH Measurement};  
 (7) 9060\_TOC\_WE: COMMON {Total Inorganic Carbon, Total organic carbon};

PRINTED ON 9/29/2016 FSR ID = FSR37595 TRVL NUM = TRVL-16-227 A-6003-618 (REV 2)





CH2M Hill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		F16-020-1410	PAGE 2 OF 2
COLLECTOR <i>Antonio James</i>	COMPANY CONTACT TODAK, D	TELEPHONE NO. 376-6427	PROJECT COORDINATOR TODAK, D	PRICE CODE 8H	DATA TURNAROUND 30 Days / 30 Days
SAMPLING LOCATION C9512, Core 16, B361C3	PROJECT DESIGNATION 200-DV-1 Operable Unit Characterization of Waste Sites Phase 3 Sampling	SAF NO. F16-020	COA 302632	AIR QUALITY <input type="checkbox"/>	METHOD OF SHIPMENT FEDERAL EXPRESS
ICE CHEST NO. NA	FIELD LOGBOOK NO. NA	ACTUAL SAMPLE DEPTH 103.1-104.6	BILL OF LADING/AIR BILL NO. NA	ORIGINAL	
SHIPPED TO TestAmerica St. Louis	OFFSITE PROPERTY NO. NA				

**SPECIAL INSTRUCTIONS**

TRVL-16-227

- (1) 8270\_SVOA\_GCMS: COMMON {Phenol}; 8270\_SVOA\_GCMS: COMMON (Add-on) {Tributyl phosphate};
- (2) 7471\_MERCURY\_CV: COMMON (SOLIDS); 6020\_METALS\_ICPMS: COMMON {Aluminum, Antimony, Barium, Cadmium, Chromium, Copper, Lead, Selenium, Silver};
- 6020\_METALS\_ICPMS: COMMON (Add-on) {Arsenic, Manganese, Nickel, Uranium}; 6010\_METALS\_ICP: COMMON {Calcium, Iron, Magnesium, Potassium, Sodium};
- (3) 9060\_TIC: COMMON {Total Inorganic Carbon}; 9060\_TOC: COMMON {Total organic carbon};
- (4) 6010\_METALS\_ICP\_WE: COMMON {Aluminum, Barium, Calcium, Iron, Magnesium, Manganese, Potassium, Sodium};
- (5) 9050\_CONDUCTIVITY\_WE: COMMON {Specific Conductance};
- (6) 9045\_pH (Non-Aqueous)\_WE: COMMON {pH Measurement};
- (7) 9060\_TOC\_WE: COMMON {Total Inorganic Carbon, Total organic carbon};

PRINTED ON 9/29/2016

FSR ID = FSR37596

TRVL NUM = TRVL-16-227

A-6003-618 (REV 2)



**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**

CH2M Hill Plateau Remediation Company  
 COLLECTOR: *SL2331*  
 Antonio James  
 SAMPLING LOCATION: C9512, Core 21, B361F9  
 ICE CHEST NO.: *N/A*  
 SHIPPED TO: TestAmerica St. Louis

COMPANY CONTACT: TODAK, D  
 TELEPHONE NO.: 376-6427  
 PROJECT DESIGNATION: 200-DV-1 Operable Unit Characterization of Waste Sites Phase 3 Sampling  
 FIELD LOGBOOK NO.: *N/A*  
 OFFSITE PROPERTY NO.: *N/A*

PROJECT COORDINATOR: TODAK, D  
 SAF NO.: F16-020  
 COA: 302632  
 BILL OF LADING/AIR BILL NO.: *N/A*

F16-020-1412  
 PRICE CODE: 8H  
 AIR QUALITY:   
 METHOD OF SHIPMENT: FEDERAL EXPRESS  
 DATA TURNAROUND: 30 Days / 30 Days  
 ORIGINAL

MATRIX*	PRESERVATION	HOLDING TIME	TYPE OF CONTAINER	NO. OF CONTAINER(S)	VOLUME	SAMPLE ANALYSIS	SAMPLE DATE	SAMPLE TIME	MATRIX*
A=Air DL=Drum Liquids DS=Drum Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other	Cool <=6C	28 Days	G/P	1	60mL	350 L AMMONIUM IN SPECIAL INSTRUCTIONS COMMON;			
POSSIBLE SAMPLE HAZARDS/ REMARKS *Contains Radioactive Material at concentrations that are not be regulated for transportation per 49 CFR/JATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1.	None	28 Days	G/P	1	250mL	SEE ITEM (2) IN SPECIAL INSTRUCTIONS			
SPECIAL HANDLING AND/OR STORAGE NA	14/40 Days	ag	1	120mL	SEE ITEM (1) IN SPECIAL INSTRUCTIONS COMMON;		10/11/16	1420	SOIL

RELINQUISHED BY/REMOVED FROM	DATE/TIME	SIGN/PRINT NAMES	RECEIVED BY/STORED IN	DATE/TIME
<i>Antonio James</i>	10/11/16/1420	<i>Antonio James</i>	<i>PBS</i>	10/11/16/1420
<i>Antonio James</i>	10/12/16/1500	<i>Antonio James</i>	<i>PBS</i>	10/12/16/1500
<i>Antonio James</i>	10/12/16/1540	<i>J. Bock, TARL</i>	<i>J. Bock, TARL</i>	10-12-16/1540
<i>J. Bock, TARL</i>	10-13-16/1335	<i>J. Bock, TARL</i>	<i>J. Bock, TARL</i>	10-13-16/1335

**CHAIN OF POSSESSION**

RELINQUISHED BY/REMOVED FROM: *Antonio James* DATE/TIME: 10/11/16/1420  
 RECEIVED BY/STORED IN: *PBS* DATE/TIME: 10/11/16/1420

RELINQUISHED BY/REMOVED FROM: *Antonio James* DATE/TIME: 10/12/16/1500  
 RECEIVED BY/STORED IN: *PBS* DATE/TIME: 10/12/16/1500

RELINQUISHED BY/REMOVED FROM: *Antonio James* DATE/TIME: 10/12/16/1540  
 RECEIVED BY/STORED IN: *J. Bock, TARL* DATE/TIME: 10-12-16/1540

RELINQUISHED BY/REMOVED FROM: *J. Bock, TARL* DATE/TIME: 10-13-16/1335  
 RECEIVED BY/STORED IN: *J. Bock, TARL* DATE/TIME: 10-13-16/1335

RELINQUISHED BY/REMOVED FROM: \_\_\_\_\_ DATE/TIME: \_\_\_\_\_  
 RECEIVED BY/STORED IN: \_\_\_\_\_ DATE/TIME: \_\_\_\_\_

RELINQUISHED BY/REMOVED FROM: \_\_\_\_\_ DATE/TIME: \_\_\_\_\_  
 RECEIVED BY/STORED IN: \_\_\_\_\_ DATE/TIME: \_\_\_\_\_

LABORATORY SECTION: \_\_\_\_\_ RECEIVED BY: \_\_\_\_\_ TITLE: \_\_\_\_\_  
 FINAL SAMPLE DISPOSITION: \_\_\_\_\_ DISPOSAL METHOD: \_\_\_\_\_ DATE/TIME: \_\_\_\_\_

PRINTED ON 9/29/2016 FSR ID = FSR37597 TRVL NUM = TRVL-16-227 A-6003-618 (REV 2)





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Ship date: Thu 10/13/2016 RICHLAND, WA US Actual delivery: Fri 10/14/2016 9:09 am EARTH CITY, MO US Delivered Signed for by: J. CLARKE

Travel History

Table with columns: Date/Time, Activity, Location. Shows travel history for 10/14/2016 and 10/13/2016.

Shipment Facts

Table with columns: Tracking number, Weight, Total pieces, Terms, Packaging, Standard transit, Service, Delivered To, Total shipment weight, Shipper reference, Special handling section.



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## Definitions/Glossary

Client: CH2M Hill Plateau Remediation Company  
Project/Site: F16-020

TestAmerica Job ID: 160-19454-1  
SDG: SL2331

## Qualifiers

## GC/MS Semi VOA

Qualifier	Qualifier Description
U	Analyzed for but not detected.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

## GC Semi VOA

Qualifier	Qualifier Description
U	Analyzed for but not detected.

## Metals

Qualifier	Qualifier Description
U	Analyzed for but not detected.
D	The reported value is from a dilution.
N	Recovery exceeds upper or lower control limits
B	Estimated result. Result is less than the RL, but greater than MDL
X	See case narrative notes for explanation of the 'X' flag

## General Chemistry

Qualifier	Qualifier Description
U	Analyzed for but not detected.
D	The reported value is from a dilution.
C	The analyte was detected in both the sample and the associated QC blank, and the sample concentration was $\leq 5X$ the blank concentration.
N	MS, MSD: Spike recovery is outside acceptance limits.
B	Estimated result. Result is less than the RL, but greater than MDL

## Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
$\alpha$	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

## Method Summary

Client: CH2M Hill Plateau Remediation Company  
Project/Site: F16-020

TestAmerica Job ID: 160-19454-1  
SDG: SL2331

Method	Method Description	Protocol	Laboratory
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	TAL SL
8015B	Diesel Range Organics (DRO) (GC)	SW846	TAL SL
6010C	Metals (ICP)	SW846	TAL SL
6020A	Metals (ICP/MS)	SW846	TAL SL
7471B	Mercury (CVAA)	SW846	TAL SL
350.1	Nitrogen, Ammonia	MCAWW	TAL SL
9012B	Cyanide, Total and/or Amenable	SW846	TAL SL
9040C	pH	SW846	TAL SL
9050A	Specific Conductance	SW846	TAL SL
9060	Total Inorganic Carbon	SW846	TAL SL
9060	Organic Carbon, Total (TOC)	SW846	TAL SL
9060	Carbon, Total and Total Inorganic	SW846	TAL SL
Moisture	Percent Moisture	EPA	TAL SL
9060_TC_TIC			TAL SL

### Protocol References:

EPA = US Environmental Protection Agency

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

### Laboratory References:

TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

### Sample Summary

Client: CH2M Hill Plateau Remediation Company  
 Project/Site: F16-020

TestAmerica Job ID: 160-19454-1  
 SDG: SL2331

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
160-19454-1	B37FJ2	Soil	10/12/16 09:00	10/14/16 09:15
160-19454-2	B37FJ2	Water	10/12/16 09:00	10/14/16 09:15
160-19454-3	B37FH6	Soil	10/11/16 09:45	10/14/16 09:15
160-19454-4	B37FH6	Water	10/11/16 09:45	10/14/16 09:15
160-19454-5	B37FH8	Soil	10/11/16 13:40	10/14/16 09:15
160-19454-6	B37FH8	Water	10/11/16 13:40	10/14/16 09:15
160-19454-7	B37FJ0	Soil	10/11/16 14:20	10/14/16 09:15



### Client Sample Results

Client: CH2M Hill Plateau Remediation Company  
 Project/Site: F16-020

TestAmerica Job ID: 160-19454-1  
 SDG: SL2331

#### Method: 8270D - Semivolatile Organic Compounds (GC/MS)

**Client Sample ID: B37FJ2**  
**Date Collected: 10/12/16 09:00**  
**Date Received: 10/14/16 09:15**

**Lab Sample ID: 160-19454-1**  
**Matrix: Soil**  
**Percent Solids: 85.3**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	39	U	380	39	ug/Kg	☼	10/20/16 12:34	10/24/16 20:42	1
Tributyl phosphate	53	U	380	53	ug/Kg	☼	10/20/16 12:34	10/24/16 20:42	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol (Surr)	64		47 - 125				10/20/16 12:34	10/24/16 20:42	1
2-Fluorobiphenyl (Surr)	69		59 - 110				10/20/16 12:34	10/24/16 20:42	1
2-Fluorophenol (Surr)	67		54 - 102				10/20/16 12:34	10/24/16 20:42	1
Nitrobenzene-d5 (Surr)	69		44 - 120				10/20/16 12:34	10/24/16 20:42	1
Phenol-d5 (Surr)	70		51 - 104				10/20/16 12:34	10/24/16 20:42	1
Terphenyl-d14 (Surr)	82		59 - 98				10/20/16 12:34	10/24/16 20:42	1

**Client Sample ID: B37FH6**  
**Date Collected: 10/11/16 09:45**  
**Date Received: 10/14/16 09:15**

**Lab Sample ID: 160-19454-3**  
**Matrix: Soil**  
**Percent Solids: 98.2**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	34	U	340	34	ug/Kg	☼	10/20/16 12:34	10/24/16 21:15	1
Tributyl phosphate	47	U	340	47	ug/Kg	☼	10/20/16 12:34	10/24/16 21:15	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol (Surr)	63		47 - 125				10/20/16 12:34	10/24/16 21:15	1
2-Fluorobiphenyl (Surr)	67		59 - 110				10/20/16 12:34	10/24/16 21:15	1
2-Fluorophenol (Surr)	65		54 - 102				10/20/16 12:34	10/24/16 21:15	1
Nitrobenzene-d5 (Surr)	66		44 - 120				10/20/16 12:34	10/24/16 21:15	1
Phenol-d5 (Surr)	69		51 - 104				10/20/16 12:34	10/24/16 21:15	1
Terphenyl-d14 (Surr)	86		59 - 98				10/20/16 12:34	10/24/16 21:15	1

**Client Sample ID: B37FH8**  
**Date Collected: 10/11/16 13:40**  
**Date Received: 10/14/16 09:15**

**Lab Sample ID: 160-19454-5**  
**Matrix: Soil**  
**Percent Solids: 94.2**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	35	U	350	35	ug/Kg	☼	10/20/16 12:34	10/24/16 21:48	1
Tributyl phosphate	48	U	350	48	ug/Kg	☼	10/20/16 12:34	10/24/16 21:48	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol (Surr)	67		47 - 125				10/20/16 12:34	10/24/16 21:48	1
2-Fluorobiphenyl (Surr)	69		59 - 110				10/20/16 12:34	10/24/16 21:48	1
2-Fluorophenol (Surr)	67		54 - 102				10/20/16 12:34	10/24/16 21:48	1
Nitrobenzene-d5 (Surr)	68		44 - 120				10/20/16 12:34	10/24/16 21:48	1
Phenol-d5 (Surr)	70		51 - 104				10/20/16 12:34	10/24/16 21:48	1
Terphenyl-d14 (Surr)	79		59 - 98				10/20/16 12:34	10/24/16 21:48	1

**Client Sample ID: B37FJ0**  
**Date Collected: 10/11/16 14:20**  
**Date Received: 10/14/16 09:15**

**Lab Sample ID: 160-19454-7**  
**Matrix: Soil**  
**Percent Solids: 93.5**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	300	J	350	35	ug/Kg	☼	10/20/16 12:34	10/24/16 22:21	1
Tributyl phosphate	49	U	350	49	ug/Kg	☼	10/20/16 12:34	10/24/16 22:21	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol (Surr)	62		47 - 125				10/20/16 12:34	10/24/16 22:21	1
2-Fluorobiphenyl (Surr)	67		59 - 110				10/20/16 12:34	10/24/16 22:21	1

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### Client Sample Results

Client: CH2M Hill Plateau Remediation Company  
 Project/Site: F16-020

TestAmerica Job ID: 160-19454-1  
 SDG: SL2331

#### Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

**Client Sample ID: B37FJ0**  
**Date Collected: 10/11/16 14:20**  
**Date Received: 10/14/16 09:15**

**Lab Sample ID: 160-19454-7**  
**Matrix: Soil**  
**Percent Solids: 93.5**

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorophenol (Surr)	64		54 - 102	10/20/16 12:34	10/24/16 22:21	1
Nitrobenzene-d5 (Surr)	66		44 - 120	10/20/16 12:34	10/24/16 22:21	1
Phenol-d5 (Surr)	67		51 - 104	10/20/16 12:34	10/24/16 22:21	1
Terphenyl-d14 (Surr)	76		59 - 98	10/20/16 12:34	10/24/16 22:21	1

#### Method: 8015B - Diesel Range Organics (DRO) (GC)

**Client Sample ID: B37FJ2**  
**Date Collected: 10/12/16 09:00**  
**Date Received: 10/14/16 09:15**

**Lab Sample ID: 160-19454-1**  
**Matrix: Soil**  
**Percent Solids: 85.3**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Kerosene (C9-C16)	0.39	U	29	0.39	mg/Kg	☼	10/20/16 13:42	10/31/16 21:19	1

  

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	92		49 - 133	10/20/16 13:42	10/31/16 21:19	1

**Client Sample ID: B37FH6**  
**Date Collected: 10/11/16 09:45**  
**Date Received: 10/14/16 09:15**

**Lab Sample ID: 160-19454-3**  
**Matrix: Soil**  
**Percent Solids: 98.2**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Kerosene (C9-C16)	0.34	U	25	0.34	mg/Kg	☼	10/20/16 13:42	10/31/16 22:39	1

  

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	95		49 - 133	10/20/16 13:42	10/31/16 22:39	1

**Client Sample ID: B37FH8**  
**Date Collected: 10/11/16 13:40**  
**Date Received: 10/14/16 09:15**

**Lab Sample ID: 160-19454-5**  
**Matrix: Soil**  
**Percent Solids: 94.2**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Kerosene (C9-C16)	0.35	U	26	0.35	mg/Kg	☼	10/20/16 13:42	11/01/16 00:00	1

  

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	90		49 - 133	10/20/16 13:42	11/01/16 00:00	1

**Client Sample ID: B37FJ0**  
**Date Collected: 10/11/16 14:20**  
**Date Received: 10/14/16 09:15**

**Lab Sample ID: 160-19454-7**  
**Matrix: Soil**  
**Percent Solids: 93.5**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Kerosene (C9-C16)	0.35	U	27	0.35	mg/Kg	☼	10/20/16 13:42	11/01/16 00:27	1

  

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	81		49 - 133	10/20/16 13:42	11/01/16 00:27	1

#### Method: 6010C - Metals (ICP)

**Client Sample ID: B37FJ2**  
**Date Collected: 10/12/16 09:00**  
**Date Received: 10/14/16 09:15**

**Lab Sample ID: 160-19454-1**  
**Matrix: Soil**  
**Percent Solids: 85.3**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	12900	N D	524	157	mg/Kg	☼	10/19/16 09:00	10/31/16 17:16	2
Iron	17000	N D	21.0	5.2	mg/Kg	☼	10/19/16 09:00	10/31/16 17:16	2

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### Client Sample Results

Client: CH2M Hill Plateau Remediation Company  
 Project/Site: F16-020

TestAmerica Job ID: 160-19454-1  
 SDG: SL2331

**Method: 6010C - Metals (ICP) (Continued)**

**Client Sample ID: B37FJ2**  
**Date Collected: 10/12/16 09:00**  
**Date Received: 10/14/16 09:15**

**Lab Sample ID: 160-19454-1**  
**Matrix: Soil**  
**Percent Solids: 85.3**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Magnesium	6970	N D	210	52.4	mg/Kg	☼	10/19/16 09:00	10/31/16 17:16	2
Potassium	1730	N D	1050	315	mg/Kg	☼	10/19/16 09:00	10/31/16 17:16	2
Sodium	193	B D	210	52.4	mg/Kg	☼	10/19/16 09:00	10/31/16 17:16	2

**Client Sample ID: B37FJ2**  
**Date Collected: 10/12/16 09:00**  
**Date Received: 10/14/16 09:15**

**Lab Sample ID: 160-19454-2**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	794		400	100	ug/L		10/24/16 10:15	10/25/16 15:33	1
Barium	30.0	U	100	30.0	ug/L		10/24/16 10:15	10/25/16 15:33	1
Calcium	9790		2000	600	ug/L		10/24/16 10:15	10/25/16 15:33	1
Iron	817		200	60.0	ug/L		10/24/16 10:15	10/25/16 15:33	1
Magnesium	2420		2000	600	ug/L		10/24/16 10:15	10/25/16 15:33	1
Manganese	14.0	B	30.0	8.0	ug/L		10/24/16 10:15	10/25/16 15:33	1
Potassium	4150	B	10000	3000	ug/L		10/24/16 10:15	10/25/16 15:33	1
Sodium	42300		2000	600	ug/L		10/24/16 10:15	10/25/16 15:33	1

**Client Sample ID: B37FH6**  
**Date Collected: 10/11/16 09:45**  
**Date Received: 10/14/16 09:15**

**Lab Sample ID: 160-19454-3**  
**Matrix: Soil**  
**Percent Solids: 98.2**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	8220	N D	442	133	mg/Kg	☼	10/19/16 09:00	10/31/16 17:34	2
Iron	15200	N D	17.7	4.4	mg/Kg	☼	10/19/16 09:00	10/31/16 17:34	2
Magnesium	4850	N D	177	44.2	mg/Kg	☼	10/19/16 09:00	10/31/16 17:34	2
Potassium	1280	N D	885	265	mg/Kg	☼	10/19/16 09:00	10/31/16 17:34	2
Sodium	195	D	177	44.2	mg/Kg	☼	10/19/16 09:00	10/31/16 17:34	2

**Client Sample ID: B37FH6**  
**Date Collected: 10/11/16 09:45**  
**Date Received: 10/14/16 09:15**

**Lab Sample ID: 160-19454-4**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	316	B	400	100	ug/L		10/24/16 10:15	10/25/16 15:37	1
Barium	30.0	U	100	30.0	ug/L		10/24/16 10:15	10/25/16 15:37	1
Calcium	7560		2000	600	ug/L		10/24/16 10:15	10/25/16 15:37	1
Iron	288		200	60.0	ug/L		10/24/16 10:15	10/25/16 15:37	1
Magnesium	2110		2000	600	ug/L		10/24/16 10:15	10/25/16 15:37	1
Manganese	8.0	U	30.0	8.0	ug/L		10/24/16 10:15	10/25/16 15:37	1
Potassium	3480	B	10000	3000	ug/L		10/24/16 10:15	10/25/16 15:37	1
Sodium	44500		2000	600	ug/L		10/24/16 10:15	10/25/16 15:37	1

**Client Sample ID: B37FH8**  
**Date Collected: 10/11/16 13:40**  
**Date Received: 10/14/16 09:15**

**Lab Sample ID: 160-19454-5**  
**Matrix: Soil**  
**Percent Solids: 94.2**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	9210	N D	506	152	mg/Kg	☼	10/19/16 09:00	10/31/16 17:38	2
Iron	14800	N D	20.2	5.1	mg/Kg	☼	10/19/16 09:00	10/31/16 17:38	2
Magnesium	5090	N D	202	50.6	mg/Kg	☼	10/19/16 09:00	10/31/16 17:38	2
Potassium	1460	N D	1010	304	mg/Kg	☼	10/19/16 09:00	10/31/16 17:38	2
Sodium	251	D	202	50.6	mg/Kg	☼	10/19/16 09:00	10/31/16 17:38	2

### Client Sample Results

Client: CH2M Hill Plateau Remediation Company  
Project/Site: F16-020

TestAmerica Job ID: 160-19454-1  
SDG: SL2331

#### Method: 6010C - Metals (ICP)

**Client Sample ID: B37FH8**  
**Date Collected: 10/11/16 13:40**  
**Date Received: 10/14/16 09:15**

**Lab Sample ID: 160-19454-6**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	100	U	400	100	ug/L		10/24/16 10:15	10/25/16 15:42	1
Barium	30.0	U	100	30.0	ug/L		10/24/16 10:15	10/25/16 15:42	1
<b>Calcium</b>	<b>14900</b>		2000	600	ug/L		10/24/16 10:15	10/25/16 15:42	1
<b>Iron</b>	<b>104</b>	<b>B</b>	200	60.0	ug/L		10/24/16 10:15	10/25/16 15:42	1
<b>Magnesium</b>	<b>3610</b>		2000	600	ug/L		10/24/16 10:15	10/25/16 15:42	1
Manganese	8.0	U	30.0	8.0	ug/L		10/24/16 10:15	10/25/16 15:42	1
<b>Potassium</b>	<b>3870</b>	<b>B</b>	10000	3000	ug/L		10/24/16 10:15	10/25/16 15:42	1
<b>Sodium</b>	<b>89100</b>		2000	600	ug/L		10/24/16 10:15	10/25/16 15:42	1

**Client Sample ID: B37FJ0**  
**Date Collected: 10/11/16 14:20**  
**Date Received: 10/14/16 09:15**

**Lab Sample ID: 160-19454-7**  
**Matrix: Soil**  
**Percent Solids: 93.5**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Calcium</b>	<b>9880</b>	<b>N D</b>	514	154	mg/Kg	☼	10/19/16 09:00	10/31/16 17:42	2
<b>Iron</b>	<b>17600</b>	<b>N D</b>	20.6	5.1	mg/Kg	☼	10/19/16 09:00	10/31/16 17:42	2
<b>Magnesium</b>	<b>6040</b>	<b>N D</b>	206	51.4	mg/Kg	☼	10/19/16 09:00	10/31/16 17:42	2
<b>Potassium</b>	<b>1930</b>	<b>N D</b>	1030	308	mg/Kg	☼	10/19/16 09:00	10/31/16 17:42	2
<b>Sodium</b>	<b>211</b>	<b>D</b>	206	51.4	mg/Kg	☼	10/19/16 09:00	10/31/16 17:42	2

#### Method: 6020A - Metals (ICP/MS)

**Client Sample ID: B37FJ2**  
**Date Collected: 10/12/16 09:00**  
**Date Received: 10/14/16 09:15**

**Lab Sample ID: 160-19454-1**  
**Matrix: Soil**  
**Percent Solids: 85.3**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Aluminum</b>	<b>9050</b>	<b>D</b>	13.1	5.2	mg/Kg	☼	10/19/16 09:00	11/11/16 01:04	5
Antimony	0.55	U D	1.4	0.55	mg/Kg	☼	10/20/16 10:15	11/10/16 22:17	5
<b>Arsenic</b>	<b>5.2</b>	<b>D</b>	2.6	1.0	mg/Kg	☼	10/19/16 09:00	11/11/16 01:04	5
<b>Barium</b>	<b>92.9</b>	<b>D</b>	5.2	1.3	mg/Kg	☼	10/19/16 09:00	11/11/16 01:04	5
<b>Cadmium</b>	<b>0.10</b>	<b>B D</b>	0.13	0.063	mg/Kg	☼	10/19/16 09:00	11/11/16 01:04	5
<b>Chromium</b>	<b>12.5</b>	<b>D</b>	2.6	1.2	mg/Kg	☼	10/19/16 09:00	11/11/16 01:04	5
<b>Copper</b>	<b>18.2</b>	<b>D</b>	2.6	1.0	mg/Kg	☼	10/19/16 09:00	11/11/16 01:04	5
<b>Lead</b>	<b>9.3</b>	<b>D</b>	0.79	0.33	mg/Kg	☼	10/19/16 09:00	11/11/16 01:04	5
<b>Manganese</b>	<b>382</b>	<b>D N</b>	1.3	0.52	mg/Kg	☼	10/19/16 09:00	11/11/16 01:04	5
<b>Nickel</b>	<b>14.4</b>	<b>D</b>	1.3	0.52	mg/Kg	☼	10/19/16 09:00	11/11/16 01:04	5
<b>Selenium</b>	<b>1.2</b>	<b>B D</b>	1.3	0.84	mg/Kg	☼	10/19/16 09:00	11/11/16 01:04	5
Silver	0.20	U D	0.52	0.20	mg/Kg	☼	10/19/16 09:00	11/11/16 01:04	5
<b>Uranium</b>	<b>0.69</b>	<b>D</b>	0.26	0.10	mg/Kg	☼	10/19/16 09:00	11/11/16 01:04	5

**Client Sample ID: B37FH6**  
**Date Collected: 10/11/16 09:45**  
**Date Received: 10/14/16 09:15**

**Lab Sample ID: 160-19454-3**  
**Matrix: Soil**  
**Percent Solids: 98.2**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Aluminum</b>	<b>8450</b>	<b>D</b>	11.1	4.4	mg/Kg	☼	10/19/16 09:00	11/11/16 01:31	5
Antimony	0.48	U D	1.2	0.48	mg/Kg	☼	10/20/16 10:15	11/10/16 22:44	5
<b>Arsenic</b>	<b>6.7</b>	<b>D</b>	2.2	0.88	mg/Kg	☼	10/19/16 09:00	11/11/16 01:31	5
<b>Barium</b>	<b>142</b>	<b>D</b>	4.4	1.1	mg/Kg	☼	10/19/16 09:00	11/11/16 01:31	5
<b>Cadmium</b>	<b>0.092</b>	<b>B D</b>	0.11	0.053	mg/Kg	☼	10/19/16 09:00	11/11/16 01:31	5
<b>Chromium</b>	<b>14.2</b>	<b>D</b>	2.2	1.0	mg/Kg	☼	10/19/16 09:00	11/11/16 01:31	5
<b>Copper</b>	<b>18.1</b>	<b>D</b>	2.2	0.88	mg/Kg	☼	10/19/16 09:00	11/11/16 01:31	5

TestAmerica St. Louis

### Client Sample Results

Client: CH2M Hill Plateau Remediation Company  
 Project/Site: F16-020

TestAmerica Job ID: 160-19454-1  
 SDG: SL2331

#### Method: 6020A - Metals (ICP/MS) (Continued)

**Client Sample ID: B37FH6**  
**Date Collected: 10/11/16 09:45**  
**Date Received: 10/14/16 09:15**

**Lab Sample ID: 160-19454-3**  
**Matrix: Soil**  
**Percent Solids: 98.2**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	6.3	D	0.66	0.28	mg/Kg	☼	10/19/16 09:00	11/11/16 01:31	5
Manganese	580	D N	1.1	0.44	mg/Kg	☼	10/19/16 09:00	11/11/16 01:31	5
Nickel	13.4	D	1.1	0.44	mg/Kg	☼	10/19/16 09:00	11/11/16 01:31	5
Selenium	0.71	U D	1.1	0.71	mg/Kg	☼	10/19/16 09:00	11/11/16 01:31	5
Silver	0.17	U D	0.44	0.17	mg/Kg	☼	10/19/16 09:00	11/11/16 01:31	5
Uranium	1.1	D	0.22	0.088	mg/Kg	☼	10/19/16 09:00	11/11/16 01:31	5

**Client Sample ID: B37FH8**  
**Date Collected: 10/11/16 13:40**  
**Date Received: 10/14/16 09:15**

**Lab Sample ID: 160-19454-5**  
**Matrix: Soil**  
**Percent Solids: 94.2**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	9850	D	12.6	5.1	mg/Kg	☼	10/19/16 09:00	11/11/16 01:38	5
Antimony	0.48	B D	1.2	0.48	mg/Kg	☼	10/20/16 10:15	11/10/16 22:50	5
Arsenic	6.7	D	2.5	1.0	mg/Kg	☼	10/19/16 09:00	11/11/16 01:38	5
Barium	84.4	D	5.1	1.3	mg/Kg	☼	10/19/16 09:00	11/11/16 01:38	5
Cadmium	0.11	B D	0.13	0.061	mg/Kg	☼	10/19/16 09:00	11/11/16 01:38	5
Chromium	18.2	D	2.5	1.1	mg/Kg	☼	10/19/16 09:00	11/11/16 01:38	5
Copper	15.6	D	2.5	1.0	mg/Kg	☼	10/19/16 09:00	11/11/16 01:38	5
Lead	6.4	D	0.76	0.32	mg/Kg	☼	10/19/16 09:00	11/11/16 01:38	5
Manganese	429	D N	1.3	0.51	mg/Kg	☼	10/19/16 09:00	11/11/16 01:38	5
Nickel	19.0	D	1.3	0.51	mg/Kg	☼	10/19/16 09:00	11/11/16 01:38	5
Selenium	1.0	B D	1.3	0.81	mg/Kg	☼	10/19/16 09:00	11/11/16 01:38	5
Silver	0.19	U D	0.51	0.19	mg/Kg	☼	10/19/16 09:00	11/11/16 01:38	5
Uranium	0.78	D	0.25	0.10	mg/Kg	☼	10/19/16 09:00	11/11/16 01:38	5

**Client Sample ID: B37FJ0**  
**Date Collected: 10/11/16 14:20**  
**Date Received: 10/14/16 09:15**

**Lab Sample ID: 160-19454-7**  
**Matrix: Soil**  
**Percent Solids: 93.5**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	11800	D	12.8	5.1	mg/Kg	☼	10/19/16 09:00	11/11/16 01:44	5
Antimony	0.53	B D	1.2	0.47	mg/Kg	☼	10/20/16 10:15	11/10/16 22:57	5
Arsenic	9.6	D	2.6	1.0	mg/Kg	☼	10/19/16 09:00	11/11/16 01:44	5
Barium	116	D	5.1	1.3	mg/Kg	☼	10/19/16 09:00	11/11/16 01:44	5
Cadmium	0.17	D	0.13	0.062	mg/Kg	☼	10/19/16 09:00	11/11/16 01:44	5
Chromium	21.8	D	2.6	1.2	mg/Kg	☼	10/19/16 09:00	11/11/16 01:44	5
Copper	22.5	D	2.6	1.0	mg/Kg	☼	10/19/16 09:00	11/11/16 01:44	5
Lead	8.5	D	0.77	0.32	mg/Kg	☼	10/19/16 09:00	11/11/16 01:44	5
Manganese	409	D N	1.3	0.51	mg/Kg	☼	10/19/16 09:00	11/11/16 01:44	5
Nickel	24.8	D	1.3	0.51	mg/Kg	☼	10/19/16 09:00	11/11/16 01:44	5
Selenium	1.2	B D	1.3	0.82	mg/Kg	☼	10/19/16 09:00	11/11/16 01:44	5
Silver	0.19	U D	0.51	0.19	mg/Kg	☼	10/19/16 09:00	11/11/16 01:44	5
Uranium	0.93	D	0.26	0.10	mg/Kg	☼	10/19/16 09:00	11/11/16 01:44	5

#### Method: 7471B - Mercury (CVAA)

**Client Sample ID: B37FJ2**  
**Date Collected: 10/12/16 09:00**  
**Date Received: 10/14/16 09:15**

**Lab Sample ID: 160-19454-1**  
**Matrix: Soil**  
**Percent Solids: 85.3**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.012	U	0.036	0.012	mg/Kg	☼	10/19/16 10:03	10/20/16 16:46	1

TestAmerica St. Louis

### Client Sample Results

Client: CH2M Hill Plateau Remediation Company  
 Project/Site: F16-020

TestAmerica Job ID: 160-19454-1  
 SDG: SL2331

#### Method: 7471B - Mercury (CVAA)

Client Sample ID: B37FH6  
 Date Collected: 10/11/16 09:45  
 Date Received: 10/14/16 09:15

Lab Sample ID: 160-19454-3  
 Matrix: Soil  
 Percent Solids: 98.2

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.011	U	0.032	0.011	mg/Kg	☼	10/19/16 10:03	10/20/16 16:48	1

Client Sample ID: B37FH8  
 Date Collected: 10/11/16 13:40  
 Date Received: 10/14/16 09:15

Lab Sample ID: 160-19454-5  
 Matrix: Soil  
 Percent Solids: 94.2

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.012	B	0.033	0.011	mg/Kg	☼	10/19/16 10:03	10/20/16 16:50	1

Client Sample ID: B37FJ0  
 Date Collected: 10/11/16 14:20  
 Date Received: 10/14/16 09:15

Lab Sample ID: 160-19454-7  
 Matrix: Soil  
 Percent Solids: 93.5

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.014	B	0.034	0.011	mg/Kg	☼	10/19/16 10:03	10/20/16 16:52	1

#### General Chemistry

Client Sample ID: B37FJ2  
 Date Collected: 10/12/16 09:00  
 Date Received: 10/14/16 09:15

Lab Sample ID: 160-19454-1  
 Matrix: Soil  
 Percent Solids: 85.3

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	0.87	C N	0.58	0.26	mg/Kg	☼	11/02/16 19:30	11/03/16 13:43	1
Cyanide, Total	0.13	U	0.58	0.13	mg/Kg	☼	10/18/16 14:35	10/18/16 18:42	1
Total Inorganic Carbon	3510		100	33.4	mg/Kg			10/26/16 15:20	1

Client Sample ID: B37FJ2  
 Date Collected: 10/12/16 09:00  
 Date Received: 10/14/16 09:15

Lab Sample ID: 160-19454-2  
 Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	8.06		0.100	0.100	SU			10/25/16 23:18	1
Specific Conductance	282		1.00	0.0970	uS/cm			10/28/16 16:36	1

Client Sample ID: B37FH6  
 Date Collected: 10/11/16 09:45  
 Date Received: 10/14/16 09:15

Lab Sample ID: 160-19454-3  
 Matrix: Soil  
 Percent Solids: 98.2

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	0.73	C N	0.51	0.23	mg/Kg	☼	11/02/16 19:30	11/03/16 13:45	1
Cyanide, Total	0.11	U	0.51	0.11	mg/Kg	☼	10/18/16 14:35	10/18/16 18:52	1
Total Organic Carbon	107		100	33.4	mg/Kg		10/24/16 21:15	10/25/16 17:23	1
Total Inorganic Carbon	1820		100	33.4	mg/Kg			10/26/16 15:20	1

Client Sample ID: B37FH6  
 Date Collected: 10/11/16 09:45  
 Date Received: 10/14/16 09:15

Lab Sample ID: 160-19454-4  
 Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	8.06		0.100	0.100	SU			10/25/16 23:22	1
Specific Conductance	349		1.00	0.0970	uS/cm			10/28/16 16:49	1

### Client Sample Results

Client: CH2M Hill Plateau Remediation Company  
 Project/Site: F16-020

TestAmerica Job ID: 160-19454-1  
 SDG: SL2331

#### General Chemistry

**Client Sample ID: B37FH8**  
**Date Collected: 10/11/16 13:40**  
**Date Received: 10/14/16 09:15**

**Lab Sample ID: 160-19454-5**  
**Matrix: Soil**  
**Percent Solids: 94.2**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	0.71	C N	0.53	0.23	mg/Kg	☼	11/02/16 19:30	11/03/16 13:47	1
Cyanide, Total	0.12	U	0.53	0.12	mg/Kg	☼	10/18/16 14:35	10/18/16 18:55	1
Total Organic Carbon	101		100	33.4	mg/Kg		10/24/16 21:15	10/25/16 17:29	1
Total Inorganic Carbon	1850		100	33.4	mg/Kg			10/26/16 15:20	1

**Client Sample ID: B37FH8**  
**Date Collected: 10/11/16 13:40**  
**Date Received: 10/14/16 09:15**

**Lab Sample ID: 160-19454-6**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.82		0.100	0.100	SU			10/25/16 23:26	1
Specific Conductance	6.27		1.00	0.0970	uS/cm			10/28/16 16:54	1
Total Organic Carbon	1.8		1.0	0.72	mg/L			10/25/16 12:53	1

**Client Sample ID: B37FJ0**  
**Date Collected: 10/11/16 14:20**  
**Date Received: 10/14/16 09:15**

**Lab Sample ID: 160-19454-7**  
**Matrix: Soil**  
**Percent Solids: 93.5**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	0.58	C N	0.53	0.24	mg/Kg	☼	11/02/16 19:30	11/03/16 13:50	1
Cyanide, Total	0.12	U	0.53	0.12	mg/Kg	☼	10/18/16 14:35	10/18/16 18:59	1

#### General Chemistry - DL

**Client Sample ID: B37FJ2**  
**Date Collected: 10/12/16 09:00**  
**Date Received: 10/14/16 09:15**

**Lab Sample ID: 160-19454-1**  
**Matrix: Soil**  
**Percent Solids: 85.3**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	220	D	200	66.8	mg/Kg		10/24/16 21:15	10/25/16 17:18	2

**Client Sample ID: B37FJ2**  
**Date Collected: 10/12/16 09:00**  
**Date Received: 10/14/16 09:15**

**Lab Sample ID: 160-19454-2**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Inorganic Carbon	25.0	D	5.0	1.1	mg/L			10/27/16 16:21	5

**Client Sample ID: B37FH6**  
**Date Collected: 10/11/16 09:45**  
**Date Received: 10/14/16 09:15**

**Lab Sample ID: 160-19454-4**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Inorganic Carbon	12.3	D	5.0	1.1	mg/L			10/27/16 16:37	5
Total Organic Carbon	2.4	D	2.0	1.4	mg/L			10/24/16 22:50	2

**Client Sample ID: B37FH8**  
**Date Collected: 10/11/16 13:40**  
**Date Received: 10/14/16 09:15**

**Lab Sample ID: 160-19454-6**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Inorganic Carbon	10.4	D	5.0	1.1	mg/L			10/27/16 16:51	5

### Client Sample Results

Client: CH2M Hill Plateau Remediation Company  
Project/Site: F16-020

TestAmerica Job ID: 160-19454-1  
SDG: SL2331

#### General Chemistry - RADL

**Client Sample ID: B37FJ2**  
**Date Collected: 10/12/16 09:00**  
**Date Received: 10/14/16 09:15**

**Lab Sample ID: 160-19454-2**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	133	D	20.0	14.4	mg/L			10/25/16 12:17	20

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11

QC Sample Results

Client: CH2M Hill Plateau Remediation Company  
 Project/Site: F16-020

TestAmerica Job ID: 160-19454-1  
 SDG: SL2331

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 160-275368/1-A  
 Matrix: Solid  
 Analysis Batch: 275798

Client Sample ID: Method Blank  
 Prep Type: Total/NA  
 Prep Batch: 275368

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	33	U	330	33	ug/Kg		10/20/16 12:34	10/24/16 15:12	1
Tributyl phosphate	46	U	330	46	ug/Kg		10/20/16 12:34	10/24/16 15:12	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol (Surr)	73		47 - 125	10/20/16 12:34	10/24/16 15:12	1
2-Fluorobiphenyl (Surr)	70		59 - 110	10/20/16 12:34	10/24/16 15:12	1
2-Fluorophenol (Surr)	67		54 - 102	10/20/16 12:34	10/24/16 15:12	1
Nitrobenzene-d5 (Surr)	69		44 - 120	10/20/16 12:34	10/24/16 15:12	1
Phenol-d5 (Surr)	71		51 - 104	10/20/16 12:34	10/24/16 15:12	1
Terphenyl-d14 (Surr)	80		59 - 98	10/20/16 12:34	10/24/16 15:12	1

Lab Sample ID: LCS 160-275368/2-A  
 Matrix: Solid  
 Analysis Batch: 275798

Client Sample ID: Lab Control Sample  
 Prep Type: Total/NA  
 Prep Batch: 275368

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Phenol	3330	2090		ug/Kg		63	50 - 96

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2,4,6-Tribromophenol (Surr)	77		47 - 125
2-Fluorobiphenyl (Surr)	72		59 - 110
2-Fluorophenol (Surr)	66		54 - 102
Nitrobenzene-d5 (Surr)	69		44 - 120
Phenol-d5 (Surr)	69		51 - 104
Terphenyl-d14 (Surr)	81		59 - 98

Lab Sample ID: 160-19400-C-1-B MS  
 Matrix: Solid  
 Analysis Batch: 275798

Client Sample ID: Matrix Spike  
 Prep Type: Total/NA  
 Prep Batch: 275368

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Phenol	34	U	3420	2120		ug/Kg	☼	62	41 - 100

Surrogate	MS %Recovery	MS Qualifier	Limits
2,4,6-Tribromophenol (Surr)	75		47 - 125
2-Fluorobiphenyl (Surr)	71		59 - 110
2-Fluorophenol (Surr)	66		54 - 102
Nitrobenzene-d5 (Surr)	68		44 - 120
Phenol-d5 (Surr)	68		51 - 104
Terphenyl-d14 (Surr)	82		59 - 98

Lab Sample ID: 160-19400-C-1-C MSD  
 Matrix: Solid  
 Analysis Batch: 275798

Client Sample ID: Matrix Spike Duplicate  
 Prep Type: Total/NA  
 Prep Batch: 275368

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	RPD Limit
Phenol	34	U	3430	2230		ug/Kg	☼	65	41 - 100	5	30

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QC Sample Results

Client: CH2M Hill Plateau Remediation Company  
Project/Site: F16-020

TestAmerica Job ID: 160-19454-1  
SDG: SL2331

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 160-19400-C-1-C MSD  
Matrix: Solid  
Analysis Batch: 275798

Client Sample ID: Matrix Spike Duplicate  
Prep Type: Total/NA  
Prep Batch: 275368

Surrogate	MSD %Recovery	MSD Qualifier	Limits
2,4,6-Tribromophenol (Surr)	75		47 - 125
2-Fluorobiphenyl (Surr)	76		59 - 110
2-Fluorophenol (Surr)	70		54 - 102
Nitrobenzene-d5 (Surr)	72		44 - 120
Phenol-d5 (Surr)	72		51 - 104
Terphenyl-d14 (Surr)	88		59 - 98

Method: 8015B - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 160-275387/1-A  
Matrix: Solid  
Analysis Batch: 276892

Client Sample ID: Method Blank  
Prep Type: Total/NA  
Prep Batch: 275387

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Kerosene (C9-C16)	0.33	U	25	0.33	mg/Kg		10/20/16 13:42	10/31/16 19:05	1

  

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	84		49 - 133	10/20/16 13:42	10/31/16 19:05	1

Lab Sample ID: LCS 160-275387/2-A  
Matrix: Solid  
Analysis Batch: 276892

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA  
Prep Batch: 275387

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Diesel Range Organics [C10-C28]	83.3	67.7		mg/Kg		81	57 - 105

  

Surrogate	LCS %Recovery	LCS Qualifier	Limits
o-Terphenyl	85		49 - 133

Lab Sample ID: 160-19454-1 MS  
Matrix: Soil  
Analysis Batch: 276892

Client Sample ID: B37FJ2  
Prep Type: Total/NA  
Prep Batch: 275387

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Diesel Range Organics [C10-C28]	0.39	U	97.4	90.7		mg/Kg	☼	93	34 - 150

  

Surrogate	MS %Recovery	MS Qualifier	Limits
o-Terphenyl	101		49 - 133

Lab Sample ID: 160-19454-1 MSD  
Matrix: Soil  
Analysis Batch: 276892

Client Sample ID: B37FJ2  
Prep Type: Total/NA  
Prep Batch: 275387

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	RPD Limit
Diesel Range Organics [C10-C28]	0.39	U	97.2	95.6		mg/Kg	☼	98	34 - 150	5	30

TestAmerica St. Louis

QC Sample Results

Client: CH2M Hill Plateau Remediation Company  
 Project/Site: F16-020

TestAmerica Job ID: 160-19454-1  
 SDG: SL2331

Surrogate	MSD %Recovery	MSD Qualifier	Limits
<i>o</i> -Terphenyl	105		49 - 133

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 160-275001/1-A  
 Matrix: Solid  
 Analysis Batch: 276916

Client Sample ID: Method Blank  
 Prep Type: Total/NA  
 Prep Batch: 275001

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	68.6	U	229	68.6	mg/Kg		10/19/16 09:00	10/31/16 16:54	1
Iron	2.3	U	9.1	2.3	mg/Kg		10/19/16 09:00	10/31/16 16:54	1
Magnesium	22.9	U	91.5	22.9	mg/Kg		10/19/16 09:00	10/31/16 16:54	1
Potassium	137	U	457	137	mg/Kg		10/19/16 09:00	10/31/16 16:54	1
Sodium	22.9	U	91.5	22.9	mg/Kg		10/19/16 09:00	10/31/16 16:54	1

Lab Sample ID: LCSSRM 160-275001/2-A  
 Matrix: Solid  
 Analysis Batch: 276916

Client Sample ID: Lab Control Sample  
 Prep Type: Total/NA  
 Prep Batch: 275001

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	Limits
Calcium	5630	5182	D	mg/Kg		92.0	73.4 - 126.5
Iron	14600	11690	D	mg/Kg		80.1	36.3 - 164.4
Magnesium	2960	2611	D	mg/Kg		88.2	65.9 - 134.5
Potassium	2910	2542	D	mg/Kg		87.4	62.5 - 137.8
Sodium	545	480.9	D	mg/Kg		88.2	52.3 - 147.5

Lab Sample ID: 160-19454-1 MS  
 Matrix: Soil  
 Analysis Batch: 276916

Client Sample ID: B37FJ2  
 Prep Type: Total/NA  
 Prep Batch: 275001

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Calcium	12900	N D	4230	13270	N D	mg/Kg	☼	8	75 - 125
Iron	17000	N D	9210	19620	N D	mg/Kg	☼	28	75 - 125
Magnesium	6970	N D	2750	8643	N D	mg/Kg	☼	61	75 - 125
Potassium	1730	N D	2720	3203	N D	mg/Kg	☼	54	75 - 125
Sodium	193	B D	1410	1252	D	mg/Kg	☼	75	75 - 125

Lab Sample ID: 160-19454-1 MSD  
 Matrix: Soil  
 Analysis Batch: 276916

Client Sample ID: B37FJ2  
 Prep Type: Total/NA  
 Prep Batch: 275001

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Calcium	12900	N D	3780	14880	D N	mg/Kg	☼	51	75 - 125	11	30
Iron	17000	N D	8220	19040	D N	mg/Kg	☼	24	75 - 125	3	30
Magnesium	6970	N D	2460	8365	D N	mg/Kg	☼	57	75 - 125	3	30
Potassium	1730	N D	2430	3061	D N	mg/Kg	☼	55	75 - 125	5	30
Sodium	193	B D	1260	1137	D	mg/Kg	☼	75	75 - 125	10	30

QC Sample Results

Client: CH2M Hill Plateau Remediation Company  
Project/Site: F16-020

TestAmerica Job ID: 160-19454-1  
SDG: SL2331

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: MB 160-275761/1-A  
Matrix: Water  
Analysis Batch: 276018

Client Sample ID: Method Blank  
Prep Type: Total/NA  
Prep Batch: 275761

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	50.0	U	200	50.0	ug/L		10/24/16 10:15	10/25/16 15:19	1
Barium	15.0	U	50.0	15.0	ug/L		10/24/16 10:15	10/25/16 15:19	1
Calcium	300	U	1000	300	ug/L		10/24/16 10:15	10/25/16 15:19	1
Iron	30.0	U	100	30.0	ug/L		10/24/16 10:15	10/25/16 15:19	1
Magnesium	300	U	1000	300	ug/L		10/24/16 10:15	10/25/16 15:19	1
Manganese	4.0	U	15.0	4.0	ug/L		10/24/16 10:15	10/25/16 15:19	1
Potassium	1500	U	5000	1500	ug/L		10/24/16 10:15	10/25/16 15:19	1
Sodium	300	U	1000	300	ug/L		10/24/16 10:15	10/25/16 15:19	1

Lab Sample ID: LCS 160-275761/2-A  
Matrix: Water  
Analysis Batch: 276018

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA  
Prep Batch: 275761

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Aluminum	10000	9961		ug/L		100	80 - 120
Barium	1000	1031		ug/L		103	80 - 120
Calcium	10000	11030		ug/L		110	80 - 120
Iron	10000	10630		ug/L		106	80 - 120
Magnesium	10000	9965		ug/L		100	80 - 120
Manganese	1000	1053		ug/L		105	80 - 120
Potassium	10000	9782		ug/L		98	80 - 120
Sodium	10000	9941		ug/L		99	80 - 120

Lab Sample ID: 160-19454-6 MS  
Matrix: Water  
Analysis Batch: 276018

Client Sample ID: B37FH8  
Prep Type: Total/NA  
Prep Batch: 275761

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Aluminum	100	U	20000	20020		ug/L		100	75 - 125
Barium	30.0	U	2000	2094		ug/L		105	75 - 125
Calcium	14900		20000	37460		ug/L		113	75 - 125
Iron	104	B	20000	21460		ug/L		107	75 - 125
Magnesium	3610		20000	23780		ug/L		101	75 - 125
Manganese	8.0	U	2000	2086		ug/L		104	75 - 125
Potassium	3870	B	20000	23920		ug/L		100	75 - 125
Sodium	89100		20000	115400	X	ug/L		132	75 - 125

Lab Sample ID: 160-19454-6 MSD  
Matrix: Water  
Analysis Batch: 276018

Client Sample ID: B37FH8  
Prep Type: Total/NA  
Prep Batch: 275761

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	RPD Limit
Aluminum	100	U	20000	19800		ug/L		99	75 - 125	1	20
Barium	30.0	U	2000	2068		ug/L		103	75 - 125	1	20
Calcium	14900		20000	37080		ug/L		111	75 - 125	1	20
Iron	104	B	20000	21220		ug/L		106	75 - 125	1	20
Magnesium	3610		20000	23420		ug/L		99	75 - 125	2	20
Manganese	8.0	U	2000	2088		ug/L		104	75 - 125	0	20
Potassium	3870	B	20000	23740		ug/L		99	75 - 125	1	20

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QC Sample Results

Client: CH2M Hill Plateau Remediation Company  
Project/Site: F16-020

TestAmerica Job ID: 160-19454-1  
SDG: SL2331

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: 160-19454-6 MSD  
Matrix: Water  
Analysis Batch: 276018

Client Sample ID: B37FH8  
Prep Type: Total/NA  
Prep Batch: 275761

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sodium	89100		20000	110900	X	ug/L		109	75 - 125	4	20

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 160-274993/1-A  
Matrix: Solid  
Analysis Batch: 278731

Client Sample ID: Method Blank  
Prep Type: Total/NA  
Prep Batch: 274993

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	1.8	U D	4.6	1.8	mg/Kg		10/19/16 09:00	11/11/16 00:44	2
Arsenic	0.37	U D	0.91	0.37	mg/Kg		10/19/16 09:00	11/11/16 00:44	2
Barium	0.46	U D	1.8	0.46	mg/Kg		10/19/16 09:00	11/11/16 00:44	2
Cadmium	0.022	U D	0.046	0.022	mg/Kg		10/19/16 09:00	11/11/16 00:44	2
Chromium	0.41	U D	0.91	0.41	mg/Kg		10/19/16 09:00	11/11/16 00:44	2
Copper	0.37	U D	0.91	0.37	mg/Kg		10/19/16 09:00	11/11/16 00:44	2
Lead	0.11	U D	0.27	0.11	mg/Kg		10/19/16 09:00	11/11/16 00:44	2
Manganese	0.18	U D	0.46	0.18	mg/Kg		10/19/16 09:00	11/11/16 00:44	2
Nickel	0.18	U D	0.46	0.18	mg/Kg		10/19/16 09:00	11/11/16 00:44	2
Selenium	0.29	U D	0.46	0.29	mg/Kg		10/19/16 09:00	11/11/16 00:44	2
Silver	0.069	U D	0.18	0.069	mg/Kg		10/19/16 09:00	11/11/16 00:44	2
Uranium	0.037	U D	0.091	0.037	mg/Kg		10/19/16 09:00	11/11/16 00:44	2

Lab Sample ID: LCS 160-274993/2-A  
Matrix: Solid  
Analysis Batch: 278731

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA  
Prep Batch: 274993

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Uranium	90.2	84.35	D	mg/Kg		93	80 - 120

Lab Sample ID: LCSSRM 160-274993/3-A  
Matrix: Solid  
Analysis Batch: 278731

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA  
Prep Batch: 274993

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	7580	6244	D	mg/Kg		82.4	37.7 - 162.3
Arsenic	114	119.7	D	mg/Kg		105.0	70.0 - 141.2
Barium	181	169.9	D	mg/Kg		93.9	72.9 - 127.1
Cadmium	93.2	87.53	D	mg/Kg		93.9	73.3 - 126.6
Chromium	109	105.9	D	mg/Kg		97.1	69.5 - 130.3
Copper	122	131.3	D	mg/Kg		107.6	74.7 - 124.6
Lead	102	99.20	D	mg/Kg		97.3	70.8 - 128.4
Manganese	407	424.1	D	mg/Kg		104.2	76.2 - 123.8

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QC Sample Results

Client: CH2M Hill Plateau Remediation Company  
Project/Site: F16-020

TestAmerica Job ID: 160-19454-1  
SDG: SL2331

Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: LCSSRM 160-274993/3-A  
Matrix: Solid  
Analysis Batch: 278731

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA  
Prep Batch: 274993

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec. Limits
Nickel	79.7	85.93	D	mg/Kg		107.8	71.5 - 128.0
Selenium	186	206.3	D	mg/Kg		110.9	68.3 - 131.7
Silver	41.8	40.95	D	mg/Kg		98.0	66.3 - 134.0

Lab Sample ID: 160-19454-1 MS  
Matrix: Soil  
Analysis Batch: 278731

Client Sample ID: B37FJ2  
Prep Type: Total/NA  
Prep Batch: 274993

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	9050	D	1110	14170	D X	mg/Kg	☼	462	75 - 125
Arsenic	5.2	D	111	108.0	D	mg/Kg	☼	93	75 - 125
Barium	92.9	D	111	194.4	D	mg/Kg	☼	91	75 - 125
Cadmium	0.10	B D	111	98.99	D	mg/Kg	☼	89	75 - 125
Chromium	12.5	D	111	110.7	D	mg/Kg	☼	89	75 - 125
Copper	18.2	D	111	121.7	D	mg/Kg	☼	93	75 - 125
Lead	9.3	D	111	108.7	D	mg/Kg	☼	90	75 - 125
Manganese	382	D N	111	445.6	D N	mg/Kg	☼	58	75 - 125
Nickel	14.4	D	111	119.3	D	mg/Kg	☼	95	75 - 125
Selenium	1.2	B D	55.5	54.11	D	mg/Kg	☼	95	75 - 125
Silver	0.20	U D	22.2	19.64	D	mg/Kg	☼	89	75 - 125
Uranium	0.69	D	111	102.3	D	mg/Kg	☼	92	75 - 125

Lab Sample ID: 160-19454-1 MSD  
Matrix: Soil  
Analysis Batch: 278731

Client Sample ID: B37FJ2  
Prep Type: Total/NA  
Prep Batch: 274993

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Aluminum	9050	D	991	13860	D X	mg/Kg	☼	486	75 - 125	2	30
Arsenic	5.2	D	99.1	97.17	D	mg/Kg	☼	93	75 - 125	11	30
Barium	92.9	D	99.1	189.7	D	mg/Kg	☼	98	75 - 125	2	30
Cadmium	0.10	B D	99.0	89.19	D	mg/Kg	☼	90	75 - 125	10	30
Chromium	12.5	D	99.1	99.55	D	mg/Kg	☼	88	75 - 125	11	30
Copper	18.2	D	99.1	111.7	D	mg/Kg	☼	94	75 - 125	9	30
Lead	9.3	D	99.1	99.56	D	mg/Kg	☼	91	75 - 125	9	30
Manganese	382	D N	99.1	473.6	D	mg/Kg	☼	93	75 - 125	6	30
Nickel	14.4	D	99.1	108.4	D	mg/Kg	☼	95	75 - 125	10	30
Selenium	1.2	B D	49.5	47.71	D	mg/Kg	☼	94	75 - 125	13	30
Silver	0.20	U D	19.8	17.64	D	mg/Kg	☼	89	75 - 125	11	30
Uranium	0.69	D	99.1	92.72	D	mg/Kg	☼	93	75 - 125	10	30

Lab Sample ID: MB 160-274996/1-A  
Matrix: Solid  
Analysis Batch: 278730

Client Sample ID: Method Blank  
Prep Type: Total/NA  
Prep Batch: 274996

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.19	U D	0.48	0.19	mg/Kg		10/20/16 10:15	11/10/16 21:43	2

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QC Sample Results

Client: CH2M Hill Plateau Remediation Company  
Project/Site: F16-020

TestAmerica Job ID: 160-19454-1  
SDG: SL2331

Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 160-274996/2-A  
Matrix: Solid  
Analysis Batch: 278730

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA  
Prep Batch: 274996

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Antimony	42.8	36.34	D	mg/Kg		85	21 - 251

Lab Sample ID: 160-19454-1 MS  
Matrix: Soil  
Analysis Batch: 278730

Client Sample ID: B37FJ2  
Prep Type: Total/NA  
Prep Batch: 274996

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Antimony	0.55	U D	53.4	48.13	D	mg/Kg	☼	90	75 - 125

Lab Sample ID: 160-19454-1 MSD  
Matrix: Soil  
Analysis Batch: 278730

Client Sample ID: B37FJ2  
Prep Type: Total/NA  
Prep Batch: 274996

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Antimony	0.55	U D	56.6	50.63	D	mg/Kg	☼	89	75 - 125	5	30

Method: 7471B - Mercury (CVAA)

Lab Sample ID: MB 160-275129/1-A  
Matrix: Solid  
Analysis Batch: 275442

Client Sample ID: Method Blank  
Prep Type: Total/NA  
Prep Batch: 275129

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.010	U	0.031	0.010	mg/Kg		10/19/16 10:03	10/20/16 16:24	1

Lab Sample ID: LCSSRM 160-275129/2-A  
Matrix: Solid  
Analysis Batch: 275442

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA  
Prep Batch: 275129

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	Limits
Mercury	9.36	8.77	D	mg/Kg		93.7	51.3 - 148.5

Lab Sample ID: 160-19400-B-1-B MS  
Matrix: Solid  
Analysis Batch: 275442

Client Sample ID: Matrix Spike  
Prep Type: Total/NA  
Prep Batch: 275129

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Mercury	0.015	B	0.811	0.886		mg/Kg	☼	107	80 - 120

Lab Sample ID: 160-19400-B-1-C MSD  
Matrix: Solid  
Analysis Batch: 275442

Client Sample ID: Matrix Spike Duplicate  
Prep Type: Total/NA  
Prep Batch: 275129

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Mercury	0.015	B	0.834	0.903		mg/Kg	☼	106	80 - 120	2	30

TestAmerica St. Louis

QC Sample Results

Client: CH2M Hill Plateau Remediation Company  
Project/Site: F16-020

TestAmerica Job ID: 160-19454-1  
SDG: SL2331

Method: 350.1 - Nitrogen, Ammonia

Lab Sample ID: MB 160-277286/1-A  
Matrix: Solid  
Analysis Batch: 277516

Client Sample ID: Method Blank  
Prep Type: Total/NA  
Prep Batch: 277286

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	0.436	B	0.50	0.22	mg/Kg		11/02/16 19:30	11/03/16 13:38	1

Lab Sample ID: LCS 160-277286/2-A  
Matrix: Solid  
Analysis Batch: 277516

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA  
Prep Batch: 277286

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Ammonia (as N)	5.00	5.40		mg/Kg		108	90 - 110

Lab Sample ID: 160-19454-7 MS  
Matrix: Soil  
Analysis Batch: 277516

Client Sample ID: B37FJ0  
Prep Type: Total/NA  
Prep Batch: 277286

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Ammonia (as N)	0.58	C N	5.32	7.78	N	mg/Kg	☼	135	90 - 110

Lab Sample ID: 160-19454-7 DU  
Matrix: Soil  
Analysis Batch: 277516

Client Sample ID: B37FJ0  
Prep Type: Total/NA  
Prep Batch: 277286

Analyte	Sample Result	Sample Qualifier	Spike Added	DU Result	DU Qualifier	Unit	D	RPD	Limit
Ammonia (as N)	0.58	C N		0.669	C	mg/Kg	☼	14	30

Method: 9012B - Cyanide, Total and/or Amenable

Lab Sample ID: MB 160-274989/1-A  
Matrix: Solid  
Analysis Batch: 275132

Client Sample ID: Method Blank  
Prep Type: Total/NA  
Prep Batch: 274989

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.11	U	0.50	0.11	mg/Kg		10/18/16 14:35	10/18/16 18:11	1

Lab Sample ID: HLCS 160-274989/3-A  
Matrix: Solid  
Analysis Batch: 275132

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA  
Prep Batch: 274989

Analyte	Spike Added	HLCS Result	HLCS Qualifier	Unit	D	%Rec	Limits
Cyanide, Total	4.80	4.95		mg/Kg		103	85 - 115

Lab Sample ID: LCS 160-274989/2-A  
Matrix: Solid  
Analysis Batch: 275132

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA  
Prep Batch: 274989

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Cyanide, Total	2.40	2.48		mg/Kg		103	85 - 115

QC Sample Results

Client: CH2M Hill Plateau Remediation Company  
 Project/Site: F16-020

TestAmerica Job ID: 160-19454-1  
 SDG: SL2331

Method: 9012B - Cyanide, Total and/or Amenable (Continued)

Lab Sample ID: 160-19400-F-1-F MS  
 Matrix: Solid  
 Analysis Batch: 275132

Client Sample ID: Matrix Spike  
 Prep Type: Total/NA  
 Prep Batch: 274989  
 %Rec.

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Cyanide, Total	0.11	U	2.46	2.44		mg/Kg	☒	100	60 - 130

Lab Sample ID: 160-19400-F-1-E DU  
 Matrix: Solid  
 Analysis Batch: 275132

Client Sample ID: Duplicate  
 Prep Type: Total/NA  
 Prep Batch: 274989

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Cyanide, Total	0.11	U	0.12	U	mg/Kg	☒	NC	30

Method: 9040C - pH

Lab Sample ID: LCS 160-275836/5  
 Matrix: Water  
 Analysis Batch: 275836

Client Sample ID: Lab Control Sample  
 Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
pH	7.00	6.990		SU		100	99.0 - 101.0

Lab Sample ID: 160-19647-A-3 DU  
 Matrix: Water  
 Analysis Batch: 275836

Client Sample ID: Duplicate  
 Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
pH	7.92		7.890		SU		0.4	5

Method: 9050A - Specific Conductance

Lab Sample ID: MB 160-276644/2  
 Matrix: Water  
 Analysis Batch: 276644

Client Sample ID: Method Blank  
 Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Specific Conductance	0.350	B	1.00	0.0970	uS/cm			10/28/16 16:13	1

Lab Sample ID: LCS 160-276644/3  
 Matrix: Water  
 Analysis Batch: 276644

Client Sample ID: Lab Control Sample  
 Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Specific Conductance	500	499.0		uS/cm		100	85 - 115

Lab Sample ID: 160-19454-2 MS  
 Matrix: Water  
 Analysis Batch: 276644

Client Sample ID: B37FJ2  
 Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Specific Conductance	282		1410	1817		uS/cm		109	75 - 125

TestAmerica St. Louis

QC Sample Results

Client: CH2M Hill Plateau Remediation Company  
 Project/Site: F16-020

TestAmerica Job ID: 160-19454-1  
 SDG: SL2331

Method: 9050A - Specific Conductance (Continued)

Lab Sample ID: 160-19454-2 DU  
 Matrix: Water  
 Analysis Batch: 276644

Client Sample ID: B37FJ2  
 Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Specific Conductance	282		281.0		uS/cm		0.3	20

Method: 9060 - Organic Carbon, Total (TOC)

Lab Sample ID: MB 160-275913/4  
 Matrix: Water  
 Analysis Batch: 275913

Client Sample ID: Method Blank  
 Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	0.72	U	1.0	0.72	mg/L			10/24/16 17:29	1

Lab Sample ID: LCS 160-275913/5  
 Matrix: Water  
 Analysis Batch: 275913

Client Sample ID: Lab Control Sample  
 Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	10.0	9.68		mg/L		97	90 - 110

Lab Sample ID: 160-19570-A-1 MS  
 Matrix: Water  
 Analysis Batch: 275913

Client Sample ID: Matrix Spike  
 Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	1.2		5.00	5.91		mg/L		93	76 - 120

Lab Sample ID: 160-19570-A-1 DU  
 Matrix: Water  
 Analysis Batch: 275913

Client Sample ID: Duplicate  
 Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Total Organic Carbon	1.2		1.10		mg/L		12	20

Lab Sample ID: MB 160-275968/4  
 Matrix: Water  
 Analysis Batch: 275968

Client Sample ID: Method Blank  
 Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	0.72	U	1.0	0.72	mg/L			10/25/16 11:14	1

Lab Sample ID: LCS 160-275968/5  
 Matrix: Water  
 Analysis Batch: 275968

Client Sample ID: Lab Control Sample  
 Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	10.0	9.76		mg/L		98	90 - 110

QC Sample Results

Client: CH2M Hill Plateau Remediation Company  
Project/Site: F16-020

TestAmerica Job ID: 160-19454-1  
SDG: SL2331

Method: 9060 - Organic Carbon, Total (TOC) (Continued)

Lab Sample ID: MB 160-275969/8-A  
Matrix: Solid  
Analysis Batch: 276002

Client Sample ID: Method Blank  
Prep Type: Total/NA  
Prep Batch: 275969

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	33.4	U	100	33.4	mg/Kg		10/24/16 21:15	10/25/16 16:48	1

Lab Sample ID: 160-19400-C-1-J MS  
Matrix: Solid  
Analysis Batch: 276002

Client Sample ID: Matrix Spike  
Prep Type: Total/NA  
Prep Batch: 275969

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Total Organic Carbon	125		1000	1097		mg/Kg		97	50 - 150

Lab Sample ID: 160-19400-C-1-I DU  
Matrix: Solid  
Analysis Batch: 276002

Client Sample ID: Duplicate  
Prep Type: Total/NA  
Prep Batch: 275969

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Total Organic Carbon	125		127.7		mg/Kg		2	30

Method: 9060 - Organic Carbon, Total (TOC) - RADL

Lab Sample ID: 160-19454-2 MS  
Matrix: Water  
Analysis Batch: 275968

Client Sample ID: B37FJ2  
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Total Organic Carbon - RADL	133	D	100	221.1	D	mg/L		88	76 - 120

Lab Sample ID: 160-19454-2 DU  
Matrix: Water  
Analysis Batch: 275968

Client Sample ID: B37FJ2  
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Total Organic Carbon - RADL	133	D	137.5	D	mg/L		3	20

Method: 9060 - Carbon, Total and Total Inorganic

Lab Sample ID: MB 160-276587/4  
Matrix: Water  
Analysis Batch: 276587

Client Sample ID: Method Blank  
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Inorganic Carbon	0.22	U	1.0	0.22	mg/L			10/27/16 15:03	1

Lab Sample ID: LCS 160-276587/5  
Matrix: Water  
Analysis Batch: 276587

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Total Inorganic Carbon	10.0	10.12		mg/L		101	85 - 129

**QC Sample Results**

Client: CH2M Hill Plateau Remediation Company  
 Project/Site: F16-020

TestAmerica Job ID: 160-19454-1  
 SDG: SL2331

**Method: 9060 - Carbon, Total and Total Inorganic (Continued)**

Lab Sample ID: LCSD 160-276587/6  
 Matrix: Water  
 Analysis Batch: 276587

Client Sample ID: Lab Control Sample Dup  
 Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Inorganic Carbon	10.0	10.26		mg/L		102	85 - 129	1	20

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11

## QC Association Summary

Client: CH2M Hill Plateau Remediation Company  
Project/Site: F16-020

TestAmerica Job ID: 160-19454-1  
SDG: SL2331

## GC/MS Semi VOA

## Prep Batch: 275368

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-19454-1	B37FJ2	Total/NA	Soil	3550C	
160-19454-3	B37FH6	Total/NA	Soil	3550C	
160-19454-5	B37FH8	Total/NA	Soil	3550C	
160-19454-7	B37FJ0	Total/NA	Soil	3550C	
MB 160-275368/1-A	Method Blank	Total/NA	Solid	3550C	
LCS 160-275368/2-A	Lab Control Sample	Total/NA	Solid	3550C	
160-19400-C-1-B MS	Matrix Spike	Total/NA	Solid	3550C	
160-19400-C-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	3550C	

## Analysis Batch: 275798

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-19454-1	B37FJ2	Total/NA	Soil	8270D	275368
160-19454-3	B37FH6	Total/NA	Soil	8270D	275368
160-19454-5	B37FH8	Total/NA	Soil	8270D	275368
160-19454-7	B37FJ0	Total/NA	Soil	8270D	275368
MB 160-275368/1-A	Method Blank	Total/NA	Solid	8270D	275368
LCS 160-275368/2-A	Lab Control Sample	Total/NA	Solid	8270D	275368
160-19400-C-1-B MS	Matrix Spike	Total/NA	Solid	8270D	275368
160-19400-C-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	8270D	275368

## GC Semi VOA

## Prep Batch: 275387

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-19454-1	B37FJ2	Total/NA	Soil	3550C	
160-19454-3	B37FH6	Total/NA	Soil	3550C	
160-19454-5	B37FH8	Total/NA	Soil	3550C	
160-19454-7	B37FJ0	Total/NA	Soil	3550C	
MB 160-275387/1-A	Method Blank	Total/NA	Solid	3550C	
LCS 160-275387/2-A	Lab Control Sample	Total/NA	Solid	3550C	
160-19454-1 MS	B37FJ2	Total/NA	Soil	3550C	
160-19454-1 MSD	B37FJ2	Total/NA	Soil	3550C	

## Analysis Batch: 276892

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-19454-1	B37FJ2	Total/NA	Soil	8015B	275387
160-19454-3	B37FH6	Total/NA	Soil	8015B	275387
160-19454-5	B37FH8	Total/NA	Soil	8015B	275387
160-19454-7	B37FJ0	Total/NA	Soil	8015B	275387
MB 160-275387/1-A	Method Blank	Total/NA	Solid	8015B	275387
LCS 160-275387/2-A	Lab Control Sample	Total/NA	Solid	8015B	275387
160-19454-1 MS	B37FJ2	Total/NA	Soil	8015B	275387
160-19454-1 MSD	B37FJ2	Total/NA	Soil	8015B	275387

## Metals

## Prep Batch: 274993

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-19454-1	B37FJ2	Total/NA	Soil	3050B	
160-19454-3	B37FH6	Total/NA	Soil	3050B	

TestAmerica St. Louis

## QC Association Summary

Client: CH2M Hill Plateau Remediation Company  
Project/Site: F16-020

TestAmerica Job ID: 160-19454-1  
SDG: SL2331

## Metals (Continued)

## Prep Batch: 274993 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-19454-5	B37FH8	Total/NA	Soil	3050B	
160-19454-7	B37FJ0	Total/NA	Soil	3050B	
MB 160-274993/1-A	Method Blank	Total/NA	Solid	3050B	
LCS 160-274993/2-A	Lab Control Sample	Total/NA	Solid	3050B	
LCSSRM 160-274993/3-A	Lab Control Sample	Total/NA	Solid	3050B	
160-19454-1 MS	B37FJ2	Total/NA	Soil	3050B	
160-19454-1 MSD	B37FJ2	Total/NA	Soil	3050B	

## Prep Batch: 274996

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-19454-1	B37FJ2	Total/NA	Soil	3050B-Sb	
160-19454-3	B37FH6	Total/NA	Soil	3050B-Sb	
160-19454-5	B37FH8	Total/NA	Soil	3050B-Sb	
160-19454-7	B37FJ0	Total/NA	Soil	3050B-Sb	
MB 160-274996/1-A	Method Blank	Total/NA	Solid	3050B-Sb	
LCS 160-274996/2-A	Lab Control Sample	Total/NA	Solid	3050B-Sb	
160-19454-1 MS	B37FJ2	Total/NA	Soil	3050B-Sb	
160-19454-1 MSD	B37FJ2	Total/NA	Soil	3050B-Sb	

## Prep Batch: 275001

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-19454-1	B37FJ2	Total/NA	Soil	3050B	
160-19454-3	B37FH6	Total/NA	Soil	3050B	
160-19454-5	B37FH8	Total/NA	Soil	3050B	
160-19454-7	B37FJ0	Total/NA	Soil	3050B	
MB 160-275001/1-A	Method Blank	Total/NA	Solid	3050B	
LCSSRM 160-275001/2-A	Lab Control Sample	Total/NA	Solid	3050B	
160-19454-1 MS	B37FJ2	Total/NA	Soil	3050B	
160-19454-1 MSD	B37FJ2	Total/NA	Soil	3050B	

## Prep Batch: 275129

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-19454-1	B37FJ2	Total/NA	Soil	7471B	
160-19454-3	B37FH6	Total/NA	Soil	7471B	
160-19454-5	B37FH8	Total/NA	Soil	7471B	
160-19454-7	B37FJ0	Total/NA	Soil	7471B	
MB 160-275129/1-A	Method Blank	Total/NA	Solid	7471B	
LCSSRM 160-275129/2-A	Lab Control Sample	Total/NA	Solid	7471B	
160-19400-B-1-B MS	Matrix Spike	Total/NA	Solid	7471B	
160-19400-B-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	7471B	

## Analysis Batch: 275442

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-19454-1	B37FJ2	Total/NA	Soil	7471B	275129
160-19454-3	B37FH6	Total/NA	Soil	7471B	275129
160-19454-5	B37FH8	Total/NA	Soil	7471B	275129
160-19454-7	B37FJ0	Total/NA	Soil	7471B	275129
MB 160-275129/1-A	Method Blank	Total/NA	Solid	7471B	275129
LCSSRM 160-275129/2-A	Lab Control Sample	Total/NA	Solid	7471B	275129
160-19400-B-1-B MS	Matrix Spike	Total/NA	Solid	7471B	275129
160-19400-B-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	7471B	275129

TestAmerica St. Louis

## QC Association Summary

Client: CH2M Hill Plateau Remediation Company  
Project/Site: F16-020

TestAmerica Job ID: 160-19454-1  
SDG: SL2331

## Prep Batch: 275761

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-19454-2	B37FJ2	Total/NA	Water	3010A	
160-19454-4	B37FH6	Total/NA	Water	3010A	
160-19454-6	B37FH8	Total/NA	Water	3010A	
MB 160-275761/1-A	Method Blank	Total/NA	Water	3010A	
LCS 160-275761/2-A	Lab Control Sample	Total/NA	Water	3010A	
160-19454-6 MS	B37FH8	Total/NA	Water	3010A	
160-19454-6 MSD	B37FH8	Total/NA	Water	3010A	

## Analysis Batch: 276018

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-19454-2	B37FJ2	Total/NA	Water	6010C	275761
160-19454-4	B37FH6	Total/NA	Water	6010C	275761
160-19454-6	B37FH8	Total/NA	Water	6010C	275761
MB 160-275761/1-A	Method Blank	Total/NA	Water	6010C	275761
LCS 160-275761/2-A	Lab Control Sample	Total/NA	Water	6010C	275761
160-19454-6 MS	B37FH8	Total/NA	Water	6010C	275761
160-19454-6 MSD	B37FH8	Total/NA	Water	6010C	275761

## Analysis Batch: 276916

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-19454-1	B37FJ2	Total/NA	Soil	6010C	275001
160-19454-3	B37FH6	Total/NA	Soil	6010C	275001
160-19454-5	B37FH8	Total/NA	Soil	6010C	275001
160-19454-7	B37FJ0	Total/NA	Soil	6010C	275001
MB 160-275001/1-A	Method Blank	Total/NA	Solid	6010C	275001
LCS SRM 160-275001/2-A	Lab Control Sample	Total/NA	Solid	6010C	275001
160-19454-1 MS	B37FJ2	Total/NA	Soil	6010C	275001
160-19454-1 MSD	B37FJ2	Total/NA	Soil	6010C	275001

## Analysis Batch: 278730

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-19454-1	B37FJ2	Total/NA	Soil	6020A	274996
160-19454-3	B37FH6	Total/NA	Soil	6020A	274996
160-19454-5	B37FH8	Total/NA	Soil	6020A	274996
160-19454-7	B37FJ0	Total/NA	Soil	6020A	274996
MB 160-274996/1-A	Method Blank	Total/NA	Solid	6020A	274996
LCS 160-274996/2-A	Lab Control Sample	Total/NA	Solid	6020A	274996
160-19454-1 MS	B37FJ2	Total/NA	Soil	6020A	274996
160-19454-1 MSD	B37FJ2	Total/NA	Soil	6020A	274996

## Analysis Batch: 278731

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-19454-1	B37FJ2	Total/NA	Soil	6020A	274993
160-19454-3	B37FH6	Total/NA	Soil	6020A	274993
160-19454-5	B37FH8	Total/NA	Soil	6020A	274993
160-19454-7	B37FJ0	Total/NA	Soil	6020A	274993
MB 160-274993/1-A	Method Blank	Total/NA	Solid	6020A	274993
LCS 160-274993/2-A	Lab Control Sample	Total/NA	Solid	6020A	274993
LCS SRM 160-274993/3-A	Lab Control Sample	Total/NA	Solid	6020A	274993
160-19454-1 MS	B37FJ2	Total/NA	Soil	6020A	274993
160-19454-1 MSD	B37FJ2	Total/NA	Soil	6020A	274993

TestAmerica St. Louis

## QC Association Summary

Client: CH2M Hill Plateau Remediation Company  
Project/Site: F16-020

TestAmerica Job ID: 160-19454-1  
SDG: SL2331

## General Chemistry

## Analysis Batch: 274742

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-19454-1	B37FJ2	Total/NA	Soil	Moisture	
160-19454-3	B37FH6	Total/NA	Soil	Moisture	
160-19454-5	B37FH8	Total/NA	Soil	Moisture	
160-19454-7	B37FJ0	Total/NA	Soil	Moisture	
160-19448-D-3 DU	Duplicate	Total/NA	Solid	Moisture	

## Prep Batch: 274989

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-19454-1	B37FJ2	Total/NA	Soil	9010C	
160-19454-3	B37FH6	Total/NA	Soil	9010C	
160-19454-5	B37FH8	Total/NA	Soil	9010C	
160-19454-7	B37FJ0	Total/NA	Soil	9010C	
MB 160-274989/1-A	Method Blank	Total/NA	Solid	9010C	
HLCS 160-274989/3-A	Lab Control Sample	Total/NA	Solid	9010C	
LCS 160-274989/2-A	Lab Control Sample	Total/NA	Solid	9010C	
160-19400-F-1-F MS	Matrix Spike	Total/NA	Solid	9010C	
160-19400-F-1-E DU	Duplicate	Total/NA	Solid	9010C	

## Analysis Batch: 275132

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-19454-1	B37FJ2	Total/NA	Soil	9012B	274989
160-19454-3	B37FH6	Total/NA	Soil	9012B	274989
160-19454-5	B37FH8	Total/NA	Soil	9012B	274989
160-19454-7	B37FJ0	Total/NA	Soil	9012B	274989
MB 160-274989/1-A	Method Blank	Total/NA	Solid	9012B	274989
HLCS 160-274989/3-A	Lab Control Sample	Total/NA	Solid	9012B	274989
LCS 160-274989/2-A	Lab Control Sample	Total/NA	Solid	9012B	274989
160-19400-F-1-F MS	Matrix Spike	Total/NA	Solid	9012B	274989
160-19400-F-1-E DU	Duplicate	Total/NA	Solid	9012B	274989

## Analysis Batch: 275836

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-19454-2	B37FJ2	Total/NA	Water	9040C	
160-19454-4	B37FH6	Total/NA	Water	9040C	
160-19454-6	B37FH8	Total/NA	Water	9040C	
LCS 160-275836/5	Lab Control Sample	Total/NA	Water	9040C	
160-19647-A-3 DU	Duplicate	Total/NA	Water	9040C	

## Analysis Batch: 275913

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-19454-4 - DL	B37FH6	Total/NA	Water	9060	
MB 160-275913/4	Method Blank	Total/NA	Water	9060	
LCS 160-275913/5	Lab Control Sample	Total/NA	Water	9060	
160-19570-A-1 MS	Matrix Spike	Total/NA	Water	9060	
160-19570-A-1 DU	Duplicate	Total/NA	Water	9060	

## Analysis Batch: 275968

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-19454-2 - RADL	B37FJ2	Total/NA	Water	9060	
160-19454-6	B37FH8	Total/NA	Water	9060	
MB 160-275968/4	Method Blank	Total/NA	Water	9060	

TestAmerica St. Louis

## QC Association Summary

Client: CH2M Hill Plateau Remediation Company  
Project/Site: F16-020

TestAmerica Job ID: 160-19454-1  
SDG: SL2331

## General Chemistry (Continued)

## Analysis Batch: 275968 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 160-275968/5	Lab Control Sample	Total/NA	Water	9060	
160-19454-2 MS - RADL	B37FJ2	Total/NA	Water	9060	
160-19454-2 DU - RADL	B37FJ2	Total/NA	Water	9060	

## Prep Batch: 275969

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-19454-1 - DL	B37FJ2	Total/NA	Soil	None	
160-19454-3	B37FH6	Total/NA	Soil	None	
160-19454-5	B37FH8	Total/NA	Soil	None	
MB 160-275969/8-A	Method Blank	Total/NA	Solid	None	
160-19400-C-1-J MS	Matrix Spike	Total/NA	Solid	None	
160-19400-C-1-I DU	Duplicate	Total/NA	Solid	None	

## Analysis Batch: 276002

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-19454-1 - DL	B37FJ2	Total/NA	Soil	9060	275969
160-19454-3	B37FH6	Total/NA	Soil	9060	275969
160-19454-5	B37FH8	Total/NA	Soil	9060	275969
MB 160-275969/8-A	Method Blank	Total/NA	Solid	9060	275969
160-19400-C-1-J MS	Matrix Spike	Total/NA	Solid	9060	275969
160-19400-C-1-I DU	Duplicate	Total/NA	Solid	9060	275969

## Analysis Batch: 276108

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-19454-1	B37FJ2	Total/NA	Soil	9060	
160-19454-3	B37FH6	Total/NA	Soil	9060	
160-19454-5	B37FH8	Total/NA	Soil	9060	

## Analysis Batch: 276587

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-19454-2 - DL	B37FJ2	Total/NA	Water	9060	
160-19454-4 - DL	B37FH6	Total/NA	Water	9060	
160-19454-6 - DL	B37FH8	Total/NA	Water	9060	
MB 160-276587/4	Method Blank	Total/NA	Water	9060	
LCS 160-276587/5	Lab Control Sample	Total/NA	Water	9060	
LCSD 160-276587/6	Lab Control Sample Dup	Total/NA	Water	9060	

## Analysis Batch: 276644

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-19454-2	B37FJ2	Total/NA	Water	9050A	
160-19454-4	B37FH6	Total/NA	Water	9050A	
160-19454-6	B37FH8	Total/NA	Water	9050A	
MB 160-276644/2	Method Blank	Total/NA	Water	9050A	
LCS 160-276644/3	Lab Control Sample	Total/NA	Water	9050A	
160-19454-2 MS	B37FJ2	Total/NA	Water	9050A	
160-19454-2 DU	B37FJ2	Total/NA	Water	9050A	

## Prep Batch: 277286

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-19454-1	B37FJ2	Total/NA	Soil	DILeach_Pre	
160-19454-3	B37FH6	Total/NA	Soil	DILeach_Pre	

TestAmerica St. Louis

## QC Association Summary

Client: CH2M Hill Plateau Remediation Company  
Project/Site: F16-020

TestAmerica Job ID: 160-19454-1  
SDG: SL2331

## General Chemistry (Continued)

## Prep Batch: 277286 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-19454-5	B37FH8	Total/NA	Soil	DILeach_Prep	
160-19454-7	B37FJ0	Total/NA	Soil	DILeach_Prep	
MB 160-277286/1-A	Method Blank	Total/NA	Solid	DILeach_Prep	
LCS 160-277286/2-A	Lab Control Sample	Total/NA	Solid	DILeach_Prep	
160-19454-7 MS	B37FJ0	Total/NA	Soil	DILeach_Prep	
160-19454-7 DU	B37FJ0	Total/NA	Soil	DILeach_Prep	

## Analysis Batch: 277516

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-19454-1	B37FJ2	Total/NA	Soil	350.1	277286
160-19454-3	B37FH6	Total/NA	Soil	350.1	277286
160-19454-5	B37FH8	Total/NA	Soil	350.1	277286
160-19454-7	B37FJ0	Total/NA	Soil	350.1	277286
MB 160-277286/1-A	Method Blank	Total/NA	Solid	350.1	277286
LCS 160-277286/2-A	Lab Control Sample	Total/NA	Solid	350.1	277286
160-19454-7 MS	B37FJ0	Total/NA	Soil	350.1	277286
160-19454-7 DU	B37FJ0	Total/NA	Soil	350.1	277286

## Prep Batch: 275969

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 160-275969/9-A	Lab Control Sample			None	

## Analysis Batch: 276002

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 160-275969/9-A	Lab Control Sample			9060_TC_TIC	275969

## Surrogate Summary

Client: CH2M Hill Plateau Remediation Company  
Project/Site: F16-020

TestAmerica Job ID: 160-19454-1  
SDG: SL2331

## Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Matrix: Soil

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)					
		TBP (47-125)	FBP (59-110)	2FP (54-102)	NBZ (44-120)	PHL (51-104)	TPH (59-98)
160-19454-1	B37FJ2	64	69	67	69	70	82
160-19454-3	B37FH6	63	67	65	66	69	86
160-19454-5	B37FH8	67	69	67	68	70	79
160-19454-7	B37FJ0	62	67	64	66	67	76

## Surrogate Legend

TBP = 2,4,6-Tribromophenol (Surr)

FBP = 2-Fluorobiphenyl (Surr)

2FP = 2-Fluorophenol (Surr)

NBZ = Nitrobenzene-d5 (Surr)

PHL = Phenol-d5 (Surr)

TPH = Terphenyl-d14 (Surr)

## Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)					
		TBP (47-125)	FBP (59-110)	2FP (54-102)	NBZ (44-120)	PHL (51-104)	TPH (59-98)
160-19400-C-1-B MS	Matrix Spike	75	71	66	68	68	82
160-19400-C-1-C MSD	Matrix Spike Duplicate	75	76	70	72	72	88
LCS 160-275368/2-A	Lab Control Sample	77	72	66	69	69	81
MB 160-275368/1-A	Method Blank	73	70	67	69	71	80

## Surrogate Legend

TBP = 2,4,6-Tribromophenol (Surr)

FBP = 2-Fluorobiphenyl (Surr)

2FP = 2-Fluorophenol (Surr)

NBZ = Nitrobenzene-d5 (Surr)

PHL = Phenol-d5 (Surr)

TPH = Terphenyl-d14 (Surr)

## Method: 8015B - Diesel Range Organics (DRO) (GC)

Matrix: Soil

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)
		OTPH1 (49-133)
160-19454-1	B37FJ2	92
160-19454-1 MS	B37FJ2	101
160-19454-1 MSD	B37FJ2	105
160-19454-3	B37FH6	95
160-19454-5	B37FH8	90
160-19454-7	B37FJ0	81

## Surrogate Legend

OTPH = o-Terphenyl

TestAmerica St. Louis

### Surrogate Summary

Client: CH2M Hill Plateau Remediation Company  
Project/Site: F16-020

TestAmerica Job ID: 160-19454-1  
SDG: SL2331

**Method: 8015B - Diesel Range Organics (DRO) (GC)**

**Matrix: Solid**

**Prep Type: Total/NA**

**Percent Surrogate Recovery (Acceptance Limits)**

Lab Sample ID	Client Sample ID	OTPH1 (49-133)
LCS 160-275387/2-A	Lab Control Sample	85
MB 160-275387/1-A	Method Blank	84

**Surrogate Legend**

OTPH = o-Terphenyl

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11